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Beekeeping As a Life Business*

By Dr. C. C. Miller,
Illinois.

Dr. C. C. Miller gave up the practice of medicine to devote his time to the production of honey for a livelihood. He became one of the best known and most loved beekeepers of America. Our readers will be interested in this article which he wrote so long ago giving his opinion of honey production as an occupation.

"It seems a pity he should settle down into nothing but a beekeeper, when he might be successful in almost any line of business he should undertake." Such expressions I have heard, when, so far as I could see, the only reasons for it were that it was thought the man might make more money at some other business than beekeeping.

I am aware that too much has been said of the bright side of beekeeping in the way of urging everyone into it, and I have protested against it; for in nine cases out of ten, the person who chooses beekeeping as his life-business, merely for the money there is in it, will meet with disappointment. But for once I want to take the other side, and say something in the way of urging the choice of this business upon a certain class.

Here is a young man about to settle down in life. His college course of study is perhaps finished (and I would urge upon every young man to get a collegiate education, whether he expects to spend his life in apiary, farm, counting-house, or pulpit); and the question is, whether beekeeping shall be his vocation. He has aptitude for the business; what little experience he has had in it has been successful; and he would really like to spend his life at it if he thought he could make as much at it as at merchandise, albeit the confinement of a merchant's life is not to his taste. But the matter of money stands first in consideration, and he decides in favor of mercantile life.

*The American Apiculturist, Dec. 1, 1887, reprinted from "Gleanings."



DR. C. C. MILLER

My young friend, you are making a mistake. In the first place, it is by no means certain that you will be one of the successful merchants. But suppose you are, and that you make double or ten times as much money as you could at beekeeping. You go on at your business, looking forward to the time when you can retire, and enjoy life. There are events that may hinder the realization of your expectations. You may not live long enough. If you do, you will find that your tastes have somewhat changed, and that the life to which you have for years looked forward with bright expectations is mainly a disappointment. On the other hand, if you follow your inclinations, and adopt the

pursuit of a beekeeper, there is no necessity for looking forward to a certain time in the future for your enjoyment of life.

You can take your enjoyment as you go—mixed, it is true, with pain and toil, but still a life of enjoyment. You have one important advantage over the merchant; your out-door life gives you a physical vigor he cannot enjoy. He has poorer food than you, even if he eats from the same dish, for he has not the same hunger to spice it. The mere fact of existence is a pleasure to a perfectly healthy animal, be he man or beast; and the man who eats his food with a thorough relish is the better man for it, physically, mentally, and perhaps morally and spiritually.

High Versus Low Salaries

There is another view that is worth taking, and it applies to all callings—beekeeping or what not. Compare two positions in life. A man in Chicago has a salary of \$2,000 and his brother in a country village has one-half as much, \$1,000. Which has the better place? Perhaps the Chicago man; perhaps not.

Throwing aside all other considerations, and taking just a dollar-and-cent point of view, if the country man's annual expenses are \$600, and those of the city man's \$1,700 (and there may be that difference, even when each seems to be living equally well) the result will be that the country man will lay by one-third more annually than the city man, in which case the \$1,000 salary will be better than the \$2,000. Suppose, how-

ever, that the annual expenses in the city is \$1,500 and \$600 in the country. In this case, \$500 is annually saved out of the \$2,000, and \$400 out of the \$1,000. Is the salary that clears the \$500 one-fourth better than the salary that clears the \$400? And it is to this particular point I want to call the especial attention of the young.

Nine out of ten of the young will be dazzled by the larger salary; and when to this is added the larger annual saving, the question is definitely settled in their mind. If they think far enough ahead, they may find a factor they have omitted from the problem. When the time comes to retire from service—it may never come, and it may be forced upon one before he desires it—when this time comes, the city man will be so fixed in his habits and mode of living, his family in their social circle, that he must continue his same life and same expense of living. Even if he had thought of going back to his former country life, he will now find it impracticable; the rule is, men do not.

Now let our two men be compared after the same number of years of service, say fifteen years. In that time the one saving \$500 per annum has \$7,500 ahead; and the other, saving \$400 per annum, has \$6,000 ahead. But what is this worth to each of them? The first, spending \$1,500 per year, can live on his \$7,500 just five years; and the second, spending \$600 per year, can live on his \$6,000 just ten years. So you see, when looked at from this point of view, the \$1,000 salary is worth just double as much as the \$2,000. In other words, the \$2,000 man lays by each year enough to support him four months, while the \$1,000 one lays by enough each year to keep him eight months. Some of you young men that are itching to get into places to make money faster, think this over. It may make you a little more content where you are.

Our Cover Picture

This picture of an old water wheel in the South was taken by our Field Editor, Frank C. Pellett, on one of his southern trips. It was enlarged for the cover by his son, Fred, now employed by the General Electric Company in Massachusetts. Frank is with Fred right now, visiting his boys in Iowa, and so the exact location of this splendid example of the old time is not known.

It is a typical scene of older days. Just once in my boyhood do I remember seeing a water wheel of this type. It was up against a building quite like the one in the picture. It was fun to watch the wheel go 'round, and the water pour down over the blades.

In a few places there are old mills

still; little home industries. One belongs to that good beekeeper, Geo. S. Gilbert, of Honeyoye Falls, New York. It reminds us of the old self sufficing days when a quiet home and a few necessities were enough to provide the foundation for a larger life. How many of us long for such a situation today when it seems so hard to duplicate this desirable atmosphere.

This series of cover pictures has brought some comments. As one reader says, "It is typically American and quite suitable on covers of the American Bee Journal."

J. E. Pleasants Dead



J. E. PLEASANTS

Word has just been received at this office of the death of J. E. Pleasants of Orange, California, on June 13. He was 96 years of age at the time of his death.

Mr. Pleasants was among California's most prominent beekeepers as well as the oldest. He served for more than twenty years as inspector of Apiaries for Orange County, and had been a frequent writer for the bee journals. During the period when he conducted, in this Journal, a department for California, his writings of the notable beekeepers of that State attracted considerable attention.

Mr. Pleasants was a 49er, going to California in the gold rush. He started in beekeeping in 1873 and was president of the California Beekeepers' Association as late as 1920.

A dear pleasant man, just as pleasant as his name indicated, and a power for good wherever he went.

If American Honey Institute Dies--Then What?

The continuation of the American Honey Institute is a problem that can now be solved only through the efforts of beekeepers throughout the United States. Every beekeeper owes the Institute a debt of gratitude for having put across the greatest honey publicity campaign ever developed for honey anywhere in the world. I cannot begin to tell you all the things the Institute has accomplished. A \$500,000.00 honey publicity campaign is being put on right now at a cost of less than \$5,000.00 to the beekeeping industry. Dozens of articles are appearing in magazines and new honey foods are continually being developed, not only by the Institute workers, but by home economics women all over the country who have become interested in honey through the efforts of the Institute, and who are endeavoring to combine honey with their special products.

The only way you can get a definite idea of what has been accomplished is to visit the American Honey Institute, and also to read the material on honey contained in the women's magazines.

The Institute had enough money on hand to run through the month of June—sufficient funds may come in to allow the Institute personnel to continue through a part of July. It may then be necessary to suspend the Institute for an indefinite period unless you help your Finance Committee by sending in contributions. One dollar for every beekeeper in the United States would immediately put the Institute back in running order. If our beekeepers fail to respond, and the Institute is suspended, it may never be revived again. We appreciate fully the serious conditions existing in a good part of the United States as a result of the drought, but in time of need we are all called upon to help worthy causes by supporting needy enterprises.

The Institute needs your support as never before, and if we let it go, the beekeepers of the United States must acknowledge that it is impossible for them to maintain any beneficial effort on behalf of their industry.

Let us form a line—join hands—and meet the issue with a determination that the Institute MUST continue.

If you have any suggestions to offer whereby we can improve the financial condition, kindly let me know at once.

H. F. Wilson, Chairman,
Institute Finance Committee.



FAMOUS SAYINGS

June—

*Freds priCe War On The
RAts Took her Noon Crop*

**Raise Workers for the Crop
and Not on the Crop**

—George S. Demuth, formerly
Editor of *Gleanings in Bee
Culture*.

The latest picture of George S. Demuth, Editor of "Gleanings," and our Field Editor, Frank C. Pellett, taken in Minneapolis the past winter.

ONLY four answers this month and two of those from old hands. So this will be the last "Famous Saying."

We thought the fame of this "Saying" would bring many replies. The whole Journal couldn't be filled with the importance of Mr. Demuth's often repeated — "Raise workers for the crop and not on the crop."

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Wm. M. Hassler of Princeton, Illinois, won first again. Mr. Hassler must have quite a library. Here is his answer:

"'Raise workers for the crop and not on the crop' with room, stores, and protection. The author of this slogan was the late Geo. S. Demuth, who died March 2nd on his 63rd birthday."

"When about fourteen years old, he bought his first colony of bees, with the nickle a day salary earned as janitor at the little red school house which he attended. From that time until his death, about 50 years later, he was a successful comb honey producer."

"Mr. Demuth was a school teacher for many years; State Bee Inspector three years; bee expert for Uncle Sam nine years; and finally, editor for *Gleanings in Bee Culture* thirteen years. But he always spent his summer vacations with his own bees in Indiana and that is how he brought out the idea of the food chamber. With it and double-walled hives, he was able to produce large crops of honey with only about one month's work for the entire year."

"As a producer of fancy comb honey, Mr. Demuth was recognized as a master and for many years, be-

ginner and veteran alike, looked to him for advice and information and that is how he earned the title 'The Man Who Knows.'

"He constantly called attention to the need of ample stores and popularized the idea of the food chamber as a source of ample reserve with this slogan 'Raise workers for the crop and not on the crop.' By this he meant that the bees should be reared to gather the harvest, instead of using the harvest period to rear a lot of bees with nothing for them to do when they reach maturity."

"He often spoke of the 'morale' of the colony, thus in one word indicating a condition of preparedness for the harvest: 'Bees, plus flowers, plus weather, with morale, insure a crop.'"

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The second is a new subscriber, Noel E. Jones of Dundas, Minnesota. His letter follows:

"'Raise workers for the crop and not on the crop' is one of the favorite sayings of George S. Demuth, late Editor of *Gleanings in Bee Culture*. All his life Demuth helped countless beginners and he always stressed the importance of having young bees ready for the honey crop. He was a great beekeeping master and was in contact with bees all his life. He started with one colony when he was fourteen. He has contributed a great deal to beekeeping in general and has given unlimited assistance to beginners. What little he has written outside his work as Editor of *Gleanings in Bee Culture*, is widely read and widely published. In passing, he left a vacancy which can never be filled

and a remarkable record to be marveled at by all."

"Demuth stressed the importance of the extra food chamber and advocated ample stores and plenty of room. He impressed upon beginners the importance of room, stores and protection which he termed the essentials of success in beekeeping."

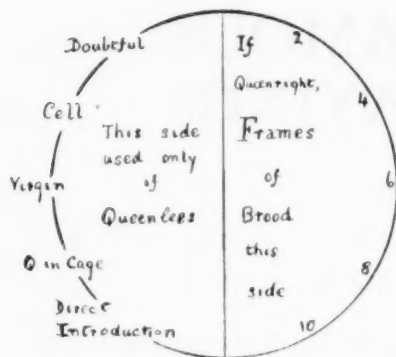
"By his saying, he meant that the young bees should be raised early in order to be ready by the time the honey harvest comes on. They should not be raised on the honeyflow for in this way they will reach maturity and be ready to go in the fields only after the flow is on and then they are not needed as vitally as before."

"Following these rules has put many a newcomer in beekeeping on the road to success and even 'old timers' can learn a lot and help themselves out by following the example of the great helper, Demuth."

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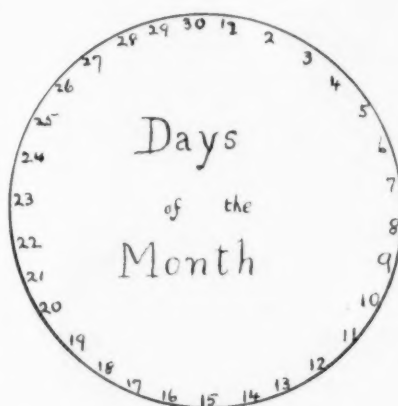
Carl Kalthoff, Concordia, Missouri: "In the literature of the world from time immemorial, in the various transactions of business and commerce, phrases and sayings have originated, which have played a fundamental part in the development and building up of the various engagements of mankind throughout the world; which have more or less, from time to time, influenced changes in various undertakings to which this or that particular saying best suited. And, having applied it, results came beyond the expectations of the majority."

"It is thus with our beloved pursuit, beekeeping. Famous Sayings like the above have had an influential (Please turn to page 327)



A Simple Record System

By Hy. W. Sanders,
Manitoba.



This is strictly a memory system and these examples are written out for our understanding only. In practice they are only carried in mind. The diagrams opposite give the key to what the nails mean in various positions and those on the next page show three examples of records as they would appear on the hives. The circles may be painted on but the nails alone are sufficient.

ONE of the problems of the beekeeper is a hive record system. For the small apiary it is not so difficult a problem as in the large one, for often the beekeeper can carry in his memory the condition of his colonies. Record books, as used by Dr. Miller, are cumbersome and get soiled from the propolis that sticks to the apiarist's hands. They also involve a serious waste of time and are not very easy to use if the day is windy—and in large scale work the press during the season is so great that every minute must be used and weather permitted to interfere as little as possible with operations.

Cards kept under the covers of the hives, but above the burlap mat have been used by us a good deal, and also a pencilled record on the painted side of the hive. The latter is fairly good, but after several seasons involves repainting the hive. So after a good deal of thought we have planned a record system that involves nothing more complicated than two nails driven into the back of each hive part way, and then bent over at right angles. These form two pointers moving in circles, and the record is kept by their position.

Our first thought was to have cards printed to be tacked on the hives, so that the bent nails might form with them a dial that could be set to indicate the condition of the colony, but after awhile we came to the conclusion that the system would be just as effective if the key to it could be carried in the mind of the apiarist. This is done by relating the record to the face of a clock. By remembering the "time" indicated it is very easy to read the record.

There is no need to record the month. We have only two or three months in the active season and each colony is looked into several times in each month, so that if we keep track of the day of the month, we shall know at once what month is meant. The clock face with which we are all familiar is divided into sixty minutes. The month has thirty days, so each day corresponds to about two minutes on our dial. Hence we can read the record accurately to within a day or two, which is near enough for prac-

tical purposes. This data is carried on the right-hand side "dial"—though of course no actual circle is seen on the hive, only a bent nail.

During the important early part of the season there are two lines of information we want to have ready. The first relates to the strength of the colony, the second to its queen. These two records are so far interrelated that we can keep them both on the left-hand "dial." If the queen is all right the only thing needful is to record the number of frames occupied by her brood. This is done on that part of the dial that on a clock carries the hours up to six o'clock. The "quarter-past" position means six frames of brood. The "one-o'clock" position means two frames and so on. The record carries data up to twelve frames which is enough.

If the hive should be queenless there is no need to record the number of frames of brood for they speedily lose all their significance. What we want to know is the condition of the colony with respect to its regaining normalcy. For this purpose the nail is revolved to places on the left-hand side of the dial. A place corresponding to eleven o'clock is an alarm signal and indicates that the colony is doubtful. This may mean that no eggs have been found at the last visit, or merely that the amount of brood is so poor that the queen is worthless. Further along this side, the pointer registers "cell" if one is found or given from another colony. Still further, the positions indicate "virgin," "queen in cage," or "direct introduction," the latter indicating an introduction by the syrup method, which we use a good deal.

It should be remembered that the key is carried only in the mind of the operator but a little practice enables the record to be read instantly. The

system is simple, inexpensive and takes practically no time to operate. Where we have bees that must be moved to outyards, they carry their records on them.

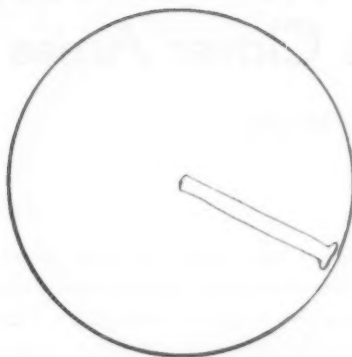
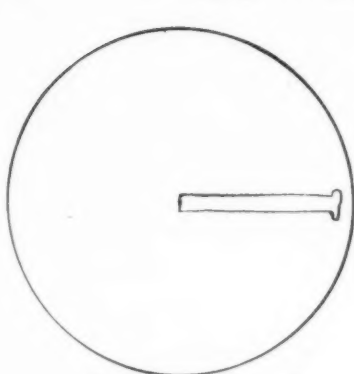
However, we also favor some simple system of numbering hives, so that a note may be made to visit certain hives on days when virgins have presumably emerged and mated, and for other purposes where there is a time element. Where the record is all carried on the hives themselves, this is not possible except by a tickler system. However comparatively few of the hives need this sort of attention and we find that for the majority of them, a glance at the indicator before opening them gives us the important data from the last examination, as well as its date, and this is about all we need to determine the condition of the colony, and its progress since last inspection. It is then only the work of a moment to make the new record, and thus to prepare the way for the next visit.

As we get into the honeyflow the data on the indicators becomes of less importance and indeed we get too busy taking off and extracting honey to take much notice of it. If a colony has not been able to build up for the flow we know it by now from results and there is not much can be done about it. All we want to know in the later part of the season is whether the colony is going to be strong enough for winter. As we are able to examine them, we indicate those that are ready for winter, with good queens and ample stores, by moving both nails on the indicator to the "noon" position, pointing vertically upward. Once a colony passes inspection in this way it is not expected that the indicators will be again manipulated until the following spring.

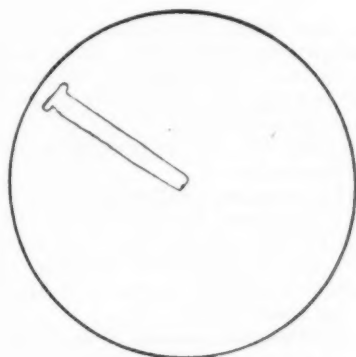
Efficient Inspection in Colorado

In our June number, L. S. Flint of Colorado under the title "Pike's Peak Region Beekeepers Suffer 50 per cent Loss from American Foulbrood" (see page 265) criticizes the inspection.

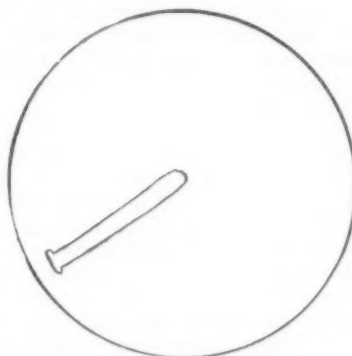
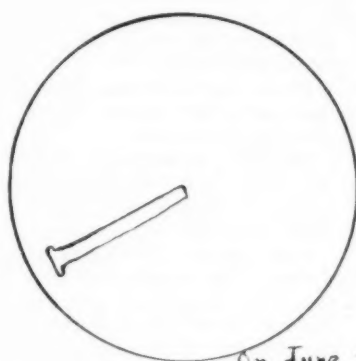
Three Examples



This hive on June 9 had 6 frames brood



This hive on June 13 or 14 was found Queenless and given a ripe cell



On June 20 a caged queen given here

R. G. Richmond, Deputy State Entomologist, of Ft. Collins, sends a statement of the results of inspection in Colorado for a seven year period. We are glad to give these figures.

The truth is that the area to which Mr. Flint refers is an isolated beekeeping area with a limited number of colonies in which there has been no authorized or organized inspection for about ten years. The statement does not give a fair picture of the general conditions in Colorado since no mention of the number of colonies inspected or the number of colonies diseased was given. If the statement had a substantial background, and the country in question had a county

inspector the evidence would call for his immediate dismissal.

The beekeepers to which Mr. Flint refers to as moving to the San Luis Valley did so for better crops and not to get away from disease. Inspection of their bees at destination showed no evidence of foulbrood last year and only 2.2 per cent in 1932. That does not indicate that the territory Mr. Flint mentioned is 50 per cent infested. 334 of these colonies in the San Luis valley were inspected in 1933.

The figures given by Mr. Richmond for the seven year period mentioned are as follows:

Year	Colonies Inspected	Per cent Diseased
1926	31901	4.15
1927	49712	2.69
1928	55077	2.53
1929	52627	2.46
1930	50702	2.74
1932	42850	2.09
1933	39130	1.25

This picture of the general conditions in Colorado is a tribute to the intelligence, efficiency and thoroughness of the Colorado inspection system. With the exception of 1930, there is a progressive downward trend in the per cent of disease. Some of the most disease ridden counties of a few years ago now present some of the cleanest records. This is responsible, first—to a vigorous campaign of destruction by fire and second—spring scouting. This plan must be commended since it heads off many sure fire outbreaks and the cost is low per colony.

California's Right to Boost Unquestioned

The short statement in the April American Bee Journal, page 164, crediting me with the statement that New York leads in honey production has drawn fire from H. Moore of California, American Bee Journal for June, page 273.

Since no self respecting Yankee has the least desire to steal any thunder from California's reputation for boosting I will make haste to explain the matter. In February a syndicated article made the rounds of the newspapers giving a digest of one of my talks during Farm and Home Week at The New York State College of Agriculture, in Ithaca. On the whole it was about as well as we usually expect of the average reporter and as often happens he misquoted one of my statements. What I really said and have said to other audiences was to the effect that New York is among the leading states in honey production.

This correction should settle the matter and California may smile serenely and be assured of the fact that her reputation for boosting has not been knowingly sullied.

George H. Rea,
New York.

Affection or Necessity?

An early writer says: "As bees serve for necessary uses, to feed the belly and heal the body, they deserve to be loved and defended of all."

I might defend them on occasion, but I refuse to love them—at least in a locality where they do not pay their way.

W. H. Hull,
Virginia.



The author, J. W. Braithwaite.

Comb Honey Production in the Sweet Clover Areas

By J. W. Braithwaite,
Manitoba.

Here is the first of two articles on comb honey production in the sweet clover areas written from the viewpoint of the northern beekeeper. The second and concluding article will follow in the August issue.

DOUBTLESS comb honey can be produced wherever sufficient nectar is available to make beekeeping worth while, but the quality of the product when produced slowly, can never hope to compare with that of sections produced during an intense honeyflow.

With comb honey, **appearance** is a major consideration. The greatest contributing factor to nice, fresh looking, full, white sections is **speed** in their production. On the other hand sections which remain on the hive for a considerable period of time, becoming propolized and travel stained, never can have the same charm of appearance.

Therefore—the great essential for successful comb honey production is an intense honeyflow. Naturally, the longer the duration of the flow the better, but even a short, intense flow of nectar is much to be preferred to a long moderate one where the objective is comb honey.

It is almost superfluous to point out that intense honeyflows are only possible where nectar is secreted in large quantities, and that this condition obtains to the Nth degree where sweet clover is extensively grown. I believe it to be no exaggeration to state that, under normal conditions, and where climatic conditions are conducive, a field of sweet clover in full bloom will, at the ratio of one colony of bees per acre, provide a supply of nectar which is only limited by the hours of sunshine available to the bees in which to gather it. I have not been fortunate enough to have the opportunity of observing bees working on other large sources of supply, such as alsike or fireweed, but surely the fury with which they work on a good field of sweet clover cannot be surpassed.

Under conditions such as these single colonies of bees have been known to increase in weight as much as twenty-four pounds in a single day. Increases of ten to twelve pounds are

quite common, and sometimes occur for several days in succession.

Here we have ideal conditions for comb honey production, especially considering the fact that the quality of sweet clover honey is second to none. Color, flavor and texture alike are excellent.

Sweet clover is being extensively grown in Manitoba, as in several states of the Union, and I have been fortunate inasmuch as all my beekeeping experience has been gained in a sweet clover district. I have been moderately successful in the production of comb honey of high quality and, at the invitation of the Editor, am happy to pass along a description of my methods in the hope that they will be of interest to beekeepers in the rapidly growing sweet clover areas on both sides of the International Line.

Having pointed out the importance of location, and I have tried to show that this is paramount, let us now get down to the actual work of the apiary, where the beekeeper has decided to go in for comb honey.

It seems desirable to approach the subject from three angles, those of equipment, spring management, and colony manipulation and we will deal with them in the order named.

Equipment

Comb honey production requires a more expensive equipment than is needed for extracted honey and a correspondingly greater outlay is therefore necessary. Most of it however is permanent, and once obtained will last indefinitely.

There are several kinds of sections on the market, and there are as many kinds of equipment for handling them.

Personally, I prefer the 4x5 section without any beeway. I do so, first, because I think that it has a much better appearance than any other section, because it appears to be larger than the 4¼x4¼ square section and, more important still, because

this size works in so nicely with the shallow extracting frame, of standard dimensions, which fills an important part in the scheme of things for comb honey production.

Briefly, the following equipment is recommended:

(1) **Standard shallow supers.** The more standard equipment one has, and the less odd size stuff the better and these supers can be used for shallow extracting frames if desirable at any time.

(2) **Hanging section holders and hanging fences.** This appears to be just a little better arrangement than any other on the market. The sections are almost completely covered, even including the edges, the holders are readily interchangeable at any time, and altogether this is a very satisfactory arrangement.

(3) **Plain 4x5 sections. No beeway, not split.** My reason for this I have already given you.

(4) **Shallow extracting frames.** Two of these will be required for each super of sections, and I will explain their function in a moment.

(5) **Full sheets of Extra Thin Foundation.** The question of foundation is a very important one and in the long run it will pay not to skimp in this regard. Sections will look just as pretty if thick foundation be used, but the eating of them will be "A horse of a different color." When the proper foundation is used the section can be eaten right through, otherwise each side needs to be scraped from the midrib separately. This is a serious fault. Full sheets of foundation pay over and over again for their using, rather than any system of starters. The bees will fill them much more readily and much more completely, and will not be so inclined to leave holes or runways through the sections.

For inserting the foundation use a block or mold, made to accommodate a section holder containing four sections. Place the frame over the blocks so that they come up inside

the sections to the middle, lay the sheets of wax inside and attach all around with liquid beeswax applied by means of a small brush. This may appear to be quite a chore, and does take a fair amount of time, but like anything else one becomes expert with experience, and after a while can get along at a surprising speed.

It is possible to buy sections grooved down the center of the inside, so that the foundation may be slid into the grooves before the top of the section is closed. This may be the ideal method but I have an idea that in hot weather the foundation might buckle and drop out, and so far have never tried it on this account.

Spring Management

Let us now deal with the management of the hive prior to the honeyflow, for this has a great deal to do with the later success or failure of our efforts.

Weak colonies of bees are of little use for honey production at any time, and for the production of comb honey, they are absolutely useless. It is absolutely futile to attempt to produce sections of comb honey from anything but strong colonies.

It is therefore very necessary to do everything possible in the spring to insure that the bees will be in the desired condition by the commencement of the honeyflow.

Packages and overwintered colonies lacking an abundance of stores must be generously fed with sugar syrup or given frames of honey. Four frames of honey per colony is not any too much to give to packages, and overwintered colonies must be dealt with according to their requirements.

The main thing is to see, not only that the bees have sufficient for their immediate requirements, but an **abundance** in order to stimulate brood rearing so that the hive will be full to overflowing with bees ready to go to work when they are required. **This, after all, is the crux of the whole matter and nothing that you can do later on, and no amount of planning or manipulation, can make up for a lack of bees in the hive at this time.** If you do not have strong colonies at the commencement of the honeyflow you may as well give up the idea of producing comb honey.

I might mention here that in the past I have tried various artifices with a view to hastening or helping along the building up of the hive, as for instance, spreading the brood and placing empty drawn combs in the center of the brood nest. I have now come to the conclusion that all of this is unnecessary and that nothing is gained by it. Indeed many times positive harm is done by upsetting the morale of the colony or chilling the brood, thus causing a setback instead of the desired boost.

A good queen, other conditions being right, will increase the size of the brood nest just so quickly as the bees are able to cope with the increased work and brood.

In Manitoba the dandelions come into bloom somewhere around the end of May. Prior to this the bees will have obtained a little pollen from willows, trees and so forth, but for us the dandelion occasions the first real, important activity of the season. Similar or comparable conditions will doubtless obtain in many of the more northern states.

From the dandelion, besides a very large amount of pollen, the bees gather considerable quantities of honey. This has the effect of stimulating brood rearing in real earnest, and here in Manitoba at all events we count the dandelion as one of the beekeepers' best friends, because it is very largely due to the stimulus received from this flower that the bees are able to build up, in the wonderful way they do, in readiness for the more serious business of gathering the main honey crop.

Now let us assume that it is getting towards the end of May. The dande-

lions are blooming nicely, our colonies have one chamber almost full of brood and honey, and we are ready for the first step in what I will term the manipulation of the hive.

Manipulation of the Hive

Right at this point is where a lot of beginners, and also some who should know better, fall down seriously, and we are all familiar with the beekeeper who is always following after his bees instead of making provision for them just one move ahead, and then wonders why he gets such poor results. It is a common thing to run across colonies of bees confined to the one and only brood chamber until far too late in the season.

As soon as the hive is in the condition just described, it is time to give the bees a super of drawn combs if same is available if not, a super of foundation will have to do. Do **not** use queen excluder, but allow the queen the unrestricted use of both chambers. As soon as she is ready she will ascend into the upper chamber and in the course of three or four weeks both chambers should be boiling over with bees.

News Notes of American Honey Institute

S. O. S.

IF there is anything more you can do to help the Institute out during the summer, we hope you will do it. Read the special message on page 300 in this issue. We cannot keep going without money to buy postage stamps and pay proper expenses.

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"Honey Helpings for Hot Days"

American Honey Institute has issued a mimeographed circular with the above title, giving recipes for honey ice creams and chilled honey desserts for hot weather. Copies may be obtained by writing to American Honey Institute, Box 2020, University Station, Madison, Wisconsin.

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National Honey Week

National Honey Week will be November 11-17 this year. Very few, however, since this announcement in the last number have written the American Honey Institute about a program. Remember we have a complete list of Honey Week helps and you can get these by writing. Very soon a report on 1933 National Honey Week will be available in printed form. **More than 2½ million pieces of printed matter containing honey copy or honey recipes are itemized.** You will be amazed at the variety of literature.

No matter how much national work American Honey Institute does, the real success of the Honey Week Program depends on local activity. Producers and their associations will need to sponsor National Honey Week to accomplish its original goal.

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It's surprising at the amount of honey material appearing in current periodicals. In February *Better Homes and Gardens*, "Honey Date Dessert." In *Modern Living*, "Waffles and Honey" and "Cold Rice with honey and cream." In April *Country Gentleman*, article on Easter honey candies. Honey mentioned twenty-eight times. Article on maple and honey cream.

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At the Century of Progress

"Things are hopping right along at the World's Fair and the Honied Rice Krispies are selling beautifully," writes Mr. Straub.

The Kellogg Company is also promoting the sale of Honied Rice Krispie Balls through the Girls' Scout organization. Their plan is to have the Girl Scouts make and sell these balls, the company furnishing recipe cards for the girls to distribute and also providing complimentary squares of waxed paper in which to wrap the Honied Rice Krispie Balls.



EDITORIAL

AMERICAN
BEE JOURNAL

Trial and Error

Doctor C. C. Miller wrote on several occasions that one of his mistakes was the too frequent experimenting and making changes on too large a scale. He often felt very confident of some new proposal only to find when he had tried it extensively that he had been mistaken.

While such experiments on the part of the bee men of the past often proved expensive for the individuals, they have given us a wealth of material on which to base our present day practice. In the matter of hives, the old bee magazines record numberless types of hives of every possible size and shape. Hundreds of thousands of dollars have been spent in the determination of the principles on which our present day practice is based. Of all the hundreds of hives which the pioneers invented, only two remain in common use in the United States. The Langstroth frame and the Quinby-Dadant frame have met the test of large scale use and about the only variation now is in the number of these frames used in a particular hive. It hardly seems probable that either of these will be entirely displaced or that others will appear to become important.

Regardless of the loss of time and money in such experiments as Miller described, one cannot doubt that men like him found much of their enjoyment in life in seeking new things. Beekeeping is losing some of its zest since our equipment and methods have become standardized to the point where men no longer find it necessary to continue to seek for better methods than those in common use.

The World Moves

In this year of deficient moisture farmers as well as bee men are counting on sweet clover to provide at least a partial crop of forage. It was quite different in 1896. Then Dr. H. Besse, an Ohio beekeeper, had planted three acres of sweet clover on his best land. In July the public officials enforcing the weed law came and cut it all down. The Doctor thus lost the use of his land, the price of the seed and labor in putting in the crop as well as the honey he might have gathered. To add insult to injury he had to pay \$27.20 in fees for official action in cutting the sweet clover. No other crop has had to contend with so much prejudice as sweet clover nor found it so difficult to secure fair treatment for its grower. In many localities but little forage would be available for either cattle or bees without sweet clover in dry seasons like this one.

More or Less?

What insanity has overtaken the race? We are plowing up cotton to dispose of the surplus when many children of cotton growers are unable to go to school for lack of suitable clothes. Until the families of those who grow the crop are fully supplied with clothing it is hard to justify the argument of a surplus.

Likewise we are urged to work less hours to increase the available portion of each worker, forgetting that only through labor can new goods be created. Only by increased production can the standard of living be raised for we can only use what we first create. There is not a man among your acquaintances who does not long for something beyond his means to purchase. To destroy goods already produced will not add to his ability to buy.

One can start across the state of Illinois or Iowa—any state in fact and stop at every farm he passes to inquire what is needed. It is safe to wager that a thousand dollars on an average will not be sufficient to pay for the things actually needed at each farm right now. Likewise stop at the home of any laborer and discover

what he needs in the way of food and clothing or fuel to meet the family demands. Here further needs will be met.

To assume that our prosperity can be increased by reducing the total of our goods is like assuming that one will feel the cold less by discarding his clothing.

There is no surplus of goods but a lack of buying power and until we find means of producing something to exchange for what we lack the world must continue its distress.

What Honey Will Buy

While honey prices are far below those of the boom days, a pound of honey will still buy a fair equivalent in other goods. If one wishes to exchange honey for any other product of the farm the advantage usually lies with the beekeeper but when he comes to exchange it for interest or taxes, for freight or other service he is penalized. The increase in freight rates at a time when prices of farm commodities have been falling has offered a serious handicap to the agricultural West. All our products pay a heavy toll in freight when they go to market and the prices of what we buy are increased to cover the added charge. It is this discrepancy which has caused so many farmers to try to live at home and give up buying products which have increased in price. The result has been unfortunate for many others along with the farmer.

Protect the Combs

Reports coming to this office indicate that a near failure of the honey crop in some localities will leave many colonies of bees in poor condition. Where bees are weak, care must be used to protect the combs against damage by wax moth. Keep all surplus combs stored over strong colonies of bees or stack them up in a tight building and fumigate them to kill the moths.

Good combs are valuable and well worth the care necessary to protect them from injury. When a good crop comes again the man who is well supplied with combs will be in position to make the most of it. During a rapid honeyflow the bees will fill a super of drawn combs in a surprisingly short time.

Good Salesmanship

To establish a new product in a strange market often requires much patience and tact. When American honey was first offered in English markets there was so much prejudice against it that but little could be sold. The story of how it was finally introduced to the English trade was told in the New York Sun, July 7, 1884. Credit was there given to a shrewd Yankee named Hoge who had been employed by a New York grocer.

Hoge was sent to London with a large shipment of honey which came from the apiary of C. R. Isham, of Peoria, New York. He visited the dealers of London with little success even though he spent weeks in the effort. Finally he sought means of sending some of the honey to the table of the queen.

A manufacturer of pickles had been formerly the Lord Steward. Hoge dined with him and gave him a large order for pickles to be sent to America. Through his influence the box of honey was accepted for the queen's table. Queen Victoria was delighted with it and directed her Lord Steward to present her thanks to the American donor and to order ten cases of American honey at once for her.

Hoge lost no time in making the queen's communication public and as a result the attitude of English dealers

changed at once and he was able to find a ready outlet for his honey. From this beginning the trade for American honey has grown with the years until large quantities are shipped to English markets.

A less persistent agent might have returned to New York without having been able to sell his shipment of honey or establishing any outlet for his product. Good salesmanship always requires special ability. With a few men like Hoge it would be possible to create a keen demand for such a product as honey which is only available in limited quantity. Good salesmen very naturally center their activity in the service of industries which offer liberal rewards.

Bees for the Crop

Much emphasis has recently been placed on getting the colony strong before the honeyflow begins. Every beekeeper has seen plenty of cases where the bees were slow in building up with the result that but little surplus honey was stored during a short honeyflow. When, as happened in many places this season, the flow lasts but a few days, it is only the strong colonies which store surplus.

Some estimate that no bees contribute much to storing of honey which develop from eggs laid less than thirty-seven days before the time of flow. This estimate is based on the supposition that the bees work in the hive for sixteen days before going afield. This, however, overlooks the fact that the young bees work inside the hive during their youth and thus release other workers for the field. The work of evaporating and storing within the hive is as important as the field work. All bees which emerge from the cells before the flow is over are likely to add to the store of the hive even though they are too young to go to the field.

Trend of Farm Crops

Much of the bee man's profit or loss may be credited directly to the trend in agriculture. When the common practice is to plant alsike or sweet clover the beekeeper benefits; when crops which produce no honey are planted the beekeeper is out of luck. Of late the trend in many localities of the Middle West is toward soy beans which produce but little pasture for the bees. There is also a marked interest in Lespedeza which appears to be of little importance as a source of honey.

In years past the interest of the beekeeper has had much influence in the spread of forage crops. This was noticeably true of alsike clover a generation ago when it was boomed by the bee men. The farmers found it well suited to their needs and readily cooperated in its spread. It is important that bee men as a class keep abreast of these trends and do what they can to encourage the planting of forage crops which meet the farmers' need and at the same time offer good bee pasture.

Overstocking

In the poor season we find the greatest difference in yields between small and large apiaries. With all pasture greatly reduced by dry weather the competition between the bees in a large apiary leaves but little surplus, where only a few colonies might store some reserve. The variation in seasons makes it impossible to make a dependable estimate of the number of colonies which can be supported in a particular locality. Many a beekeeper finds it to his advantage to reduce the colonies in each apiary and scatter them out in new locations in a season like this one.

Shifting Bee Pasture

Changing of conditions in the agricultural regions where the farmers abandon one crop in favor of another often brings serious problems to the beekeeper. The writer well remembers the amount of discussion which centered in the famous huajillo belt of southwest Texas but a few years ago. Honey was shipped by carloads and beekeepers were prosperous. Soon the clearing of the land and the planting of cotton brought down the yields

of honey to the point where many of the large producers sought other locations.

Soon we were hearing of the Pecos Valley in New Mexico and the Grand Valley in Colorado and there was prosperity among the bee men of those valleys for a time. Heavy spraying of orchards caused the death of so many bees that bee men were again forced to move.

In the years of the early nineteen hundreds the eastern slope of the Rockies in Colorado was widely heralded as a Beekeepers' Paradise and something approaching a boom took place in that region. For a time big crops were harvested but the planting of beets instead of alfalfa, or the cutting of alfalfa for hay instead of for a seed crop soon changed conditions there.

In recent years the writer has visited other valleys in the West which for a time had offered abundant honey crops where now we find smaller yields and the beekeeper looking for better pastures elsewhere. It makes one wonder whether there is such a thing as a permanently dependable bee location. North Dakota, where such large crops were harvested for a few years, no longer offers the measure of security that it once appeared to do.

The beekeeper depends upon his neighbor's land for his bee pasture and if a change of crops destroys the bee range he must seek forage elsewhere. Fortunate is the bee man who lives in a neighborhood where the forage is constant.

Wintering in Clamps

In the eighties much space in the bee magazines was given to a discussion of wintering in clamps. It was then assumed by many beekeepers that the bees were able to hibernate during cold weather in a manner similar to bears and ground hogs. It was thought that if the hives could be buried in the ground during severe weather the bees would come through with a minimum consumption of stores. Some even argued that ventilation and air were unnecessary.

As would be expected many disastrous losses occurred. Where the clamps were so constructed as to keep the bees dry and still provide sufficient ventilation, success was often reported. When the true condition within the hive during cold weather became better understood more intelligent preparation for wintering became the rule.

Overstocking

Wherever beekeepers find pasture which yields more than average returns competition is likely to develop for locations. This is particularly true in localities where attention is focused by publicity concerning the local activities. A case in point was the Arkansas Valley in Colorado about 1900 to 1902. Advertised as a "Beekeepers' Paradise" there were soon so many beekeepers established there that difficulties arose over prior rights. In an attempt to meet the situation the Colorado State Beekeepers' Association appointed a committee to be known as the arbitration committee. This committee was expected to hear any complaint, if necessary examine the location, and propose a plan of settlement which would conserve the rights of the disputants. The question of rights to ranges has long been a live topic among bee men but no satisfactory solution has yet been found.

Cost of Drones

A German investigator has estimated that 1000 drones will consume a little more than four ounces of honey daily. The further estimate is made that drones reared in 28 square inches of comb will consume about nine pounds of honey in five weeks. (Whether this be one cycle or a full season of brood is not stated.)

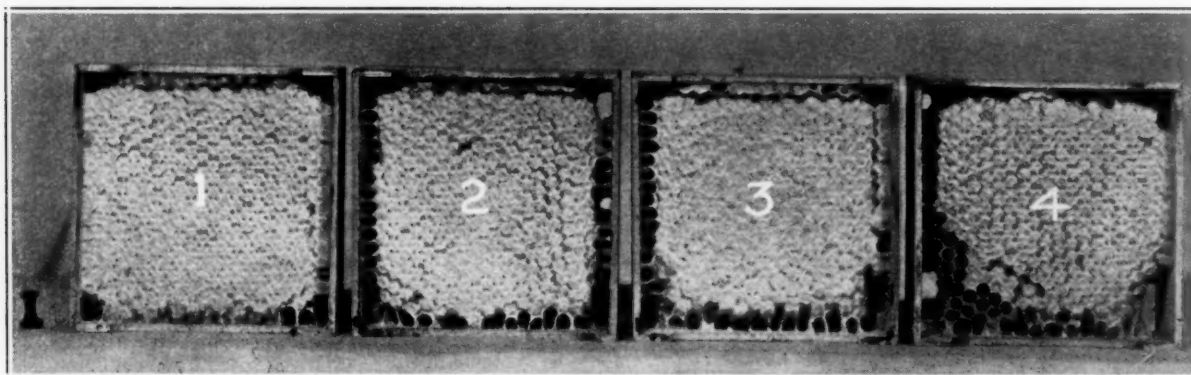
Where the bees are permitted to rear large numbers of drones it is readily apparent that a considerable tax upon the colony results. On the other hand if worker bees had been reared instead, not only would this tax be saved but the workers would have made a substantial addition to the resources of the colony.

The up-to-date beekeeper long ago learned that little profit comes from rearing surplus drones. To sort out the combs containing drone cells from the brood nest and to replace them with frames with full sheets of foundation is a profitable practice.

Preparation of Crop and Marketing

By Chas. Kruse,
Illinois.

Fourth in the comb honey series by Mr. Kruse. Now we remove the honey and prepare it for market.



Fancy (1); number 1 (2); number two (3); and cull (4) comb honey, according to Colorado rules.

THE sections should be paraffined to keep them from propolis stain. We cannot be too careful in preparing the crop. Soiled hands leave a dirty stain which cannot be removed from a clean white section. The hands should be clean when handling comb honey sections because the basswood of the sections has a habit of taking all stains.

All propolis should be removed from the sections. What a sight for keen eyes to see honey on shelves dirty and covered with propolis. After the sections are cleaned, they are placed in neat piles on the work bench.

Grading

Fancy sections should not weigh less than 13 ounces net weight. A section weighing 14 ounces, therefore, is stamped 13 ounces net, allowing one ounce for the wood. Twenty-four sections that weigh from 22 to 22½ pounds will therefore be stamped 13 ounces net weight for each section. Twenty-three pound case will be stamped 14 ounces. A twenty-four pound case is stamped 15 ounces. Buyers are pleased to have the weight of the case on the outside. This is also good for the producer as well as the buyer. It is mighty handy to know at a glance what a case contains. A small platform scale will hold twenty-four sections and is excellent for the comb honey man.

No. 1 honey should weight from 21 to 22 pounds, net weight 12 ounces per section. No. 2 honey should weigh from 20 to 21 pounds, net weight 11 ounces per section. Honey weighing less than 11 ounces net should not be

sold. Give it back to the bees. They will be glad to get it.

Cull comb honey has left a mark on our markets. How disappointing it must be to all buyers to find cull sections in the bottom of the case. Let us be brave enough not to pack our cull sections. Keep them for spring feeding. Give them away if you wish but do not offer them for sale. Let the bees clean them up. You will need them for bait sections.

Cellophane has now come into general use. It is excellent for keeping dust and dirt from section honey and it is also good for displaying. Chain stores demand it but remember we should not hide our culls in wrappers, expecting to fool the public. We can't fool everybody all the time. The old order of things is rapidly passing.

We must give the buyer and the public a fine article. If we cannot do that, it is best not to produce comb honey. Every section should be up to the gradeweight, immaculately clean and delivered in perfect condition. If we have done these things, we will at least have been true to ourselves and will have kept our business beyond reproach. Our honor is at stake, so let us be as honorable as the insect we endeavor to control. There is no finer word in the English language than "Honey."

Beekeepers are individuals. Why can't we open our eyes and see that the whole corporate world is rapidly organized. Why can't we see that our only chance is to organize. We should have strong county beekeeping organizations, affiliated with a state organization and the state organization bound by strong hands to a

national association. If this comes to pass, we can demand our rights. Think of 800,000 beekeepers extending \$1.00 each to the American Honey Institute. Think what that will amount to and what it will do if each beekeeper would give \$2.00 instead of \$1.00. That would give us \$1,600,000. We could spend \$200,000 for administration purposes and still have \$1,400,000 for advertising. This staggers our imagination. What have we done. We meet and talk production and foulbrood and leave the rest to the angels.

Will we ever be able to organize? Do we still believe that the toughest should survive? How many of us will go to defeat under the old law? Is there no way by which we can rise above our selfishness? Is it true that at least half of us will not listen to reason and go to miserable defeat as far as beekeeping is concerned?

Two dollars per case for good comb honey means but one thing, "wreck." In the next article you will get some interesting figures on the cost of production based on twenty-four years of experience. After reading it if you still believe you can survive on \$2.00 honey, well and good.

What we need is symphony, counterpoint and harmony; we can then gain recognition from our government. Is our government organized? It is. It will never hear our voice until we have concerted action to make ourselves heard. An industry of any consequence is organized so why not beekeepers? Shall we forever fight a lone hand? If we put up a fight, honey will never be removed from the world markets; if we don't

there is a possibility that it will. We will never be able to force the public to buy honey if they don't want it but we can make a fight for it and watch results. If the buying public refuses to take the finest sweet on earth, we can then quit, but meanwhile we cannot quit without a fair fight.

Remember the whole business world is organized and without organization we have no voice. We should invite individual effort in production and concerted action in advertising.

Comb honey is individualistic and does not lend itself to mass production. To produce heavy, white sections, requires good judgment and excellent equipment. Should we let it be removed from the market by producing a poor quality?

Poor Conditions in California

The California State Department of Agriculture issued a report on Monday, May 20th, that prospects for a normal honey crop throughout the state this year are poor. Practically all honey producing sections of the state, except the Sacramento Valley, are in bad condition. The main reason is that the mild spring brought early flowerings that evaporated their honey before the bees had their wings. According to the report just issued by the Department, great numbers of southern California bees will starve to death unless artificially fed, which probably will be financially impossible. Some bee men in the South are moving their bees to the Imperial Valley to work on the alfalfa. In the San Joaquin Valley, bees have small prospects. The report states that practically the entire state honey output will come from the Sacramento Valley. Alfalfa and star thistle are shaping up well and a normal crop is predicted provided hot days and cool nights prevail throughout July and August. Nearly all 1933 hold over honey has been disposed of. For California at least, the shortage presages a materially higher price for honey.

David G. Sanborn,
California.

Shall the Producer Pack His Honey?

By J. J. Wilder,
Georgia.

In your edition of last March under this heading, the question was brought up as an important one. In my opinion the producer may rightfully be his own packer. This would especially be true in the Southeast. Our beekeepers know their own honey, they know how to select it, grade it, and pack it better than anyone

else. As a rule honey bottlers know but little about the honey they bottle and most of them do not care just what they are packing. Beekeepers, however, know.

In our section, we do not produce section comb honey any more but chunk honey in shallow frames, cutting it into blocks for packing with extracted honey in jars. More than 75 per cent of the crop goes out in this way and a small per cent reaches the market in liquid form.

It would take a packer right where the honey is produced to pack chunk honey properly and a distant bottling plant could not put up and pack it. The packing of chunk honey must go on daily winter and summer and the honey must be sold while fresh so that it is consumed before granulation. Otherwise it is not satisfactory on the general market.

Chunk honey has taken the place of section honey here and it is now rapidly taking the place of extracted honey. Without much change in the next few years, all the honey in retail containers throughout the Southeast will be chunk honey. This is our salvation.

Another Garden Book

There is a marked tendency among present day gardeners to take special interest in some specialty. The peony and iris have attracted many devoted followers and numerous publications have been devoted to them. The daylily is the latest of the garden flowers to receive such attention. "Daylilies" is the title of a new book by Dr. A. B. Stout recently issued by the MacMillan Company of New York City.

The daylily is of special interest because it is rather new as an object of special plant breeding for the purpose of creating new varieties and also because of its adaptability. The

peony will not succeed well in Florida or other far southern localities but the daylily will do equally well for the Florida flower lover and his northern cousin. Doctor Stout's book is likely to do much to stimulate interest in this group. Most readers will be surprised to learn how many varieties of daylilies are already available in the nurseries.

The book gives full descriptions of the varieties, practical suggestions for their culture and gives definite information as to persons interested in their development and refers to the literature of the subject.

Those interested may secure the book from the publishers at the list price of \$3.00 postpaid.

Distance Does Not Measure the Difference

In writing about when package bees should arrive in Manitoba, Mitchener says, "We find it best to order bees for April 15th delivery. This is when the first pollen is available and normal conditions prevail."

That availability of pollen seems to be important for the rapid development of package bees, especially where no combs are on hand with pollen and honey already stored. Also he brings out the point that, if packages are to work on the crop, they should have a good period in which to build up.

The attractive thing about this advice for Manitoba beekeepers is its parallel for beekeepers in states like Illinois or Iowa. Packages received from the 10th to the 20th of April are on hand at about the beginning of settled weather here too. There's not much difference although Manitoba is a long way north.

Honey Flavored Ham



Not a new use for honey but new to many persons. This roadside display gives a new idea to housewives

and a new taste thought to those who pass.

Natt N. Dodge,
Washington.

"White Tupelo" of Western Florida

By E. Oertel, Assistant Apiculturist,
Southern States Bee Culture Field Laboratory⁽¹⁾
Bureau of Entomology, United States Department of Agriculture.

ONE of the most interesting areas devoted to the production of honey is the valley of the Apalachicola River in western Florida, where large quantities of tupelo honey are gathered. Many articles describing the peculiar beekeeping conditions obtained there have appeared in bee journals and in bee books. Areas along the Choctawhatchee, Chipola, and Ocklockonee Rivers are also important in the production of tupelo honey. In order that the beekeeping possibilities of a locality may be thoroughly known, one of the prime essentials is the correct identification of the major honey plants. Errors in observation should be corrected wherever possible, if for no other reason than for accuracy.

There probably is more confusion in the literature concerning the tupelos (*Nyssa* species), incorrectly called "gum," than concerning any other southern honey plant. This is largely due to the use of local common names by most beekeepers whose notes concerning tupelo appear in the bee

journals. Table 1 gives an indication of the duplication of common names, and from it one can readily judge the fallacy of attempting to properly evaluate a certain species of *Nyssa* as a honey plant without first obtaining a correct determination of the plant in question. It is doubtful if one common name can be selected now and used for the same species throughout the South.

According to Sargent (5), (2), the tupelos are confined to the eastern part of the United States and to southern Asia (from the Himalayas to Java), where only *Nyssa arborea* is found. It is believed that during the Tertiary epoch *Nyssa* was perhaps found to the Arctic Circle in America and also in Europe. At the present time only introduced and cultivated tupelo trees are found in Europe. The earliest mention of *N. ogeche* is in 1775, according to Sargent (5), when Bernard Romans described the natural history of Florida. Wilder (8) gives some interesting historical legends concerning the introduction of white tupelo into Georgia, but the accuracy of that material may be questioned. There is no doubt, however, that Wilder's description refers to *N. ogeche*.

During May, 1931, the writer made a trip to western Florida, southern Alabama, and southern Mississippi. Several days were spent studying the "white tupelo" along the Ocklockonee River in Wakulla County, Florida. The trees, both staminate and pistillate, were in full bloom and the blossoms were worked heavily by honey-

bees from dawn to dusk. These trees were called "white tupelo" by the beekeepers and were said to be the important tupelo of western Florida. Specimens of the trees in bloom from several places were identified as *Nyssa ogeche* Marsh. (3).

Specimens of a tupelo growing north of Pascagoula, Miss., were identified as *Nyssa sylvatica* Marsh. This species grows in and along streams and ponds. It blooms in late April and early May.

In May, 1932, the Choctawhatchee and Apalachicola River areas of Florida were visited. "White tupelo," so named by the beekeepers and said to be the source of their valuable tupelo honey, was in full bloom, and specimens were obtained for identification. They were later found to be *Nyssa ogeche* Marsh.

Specimens of so-called "black tupelo" or "black gum" were obtained near Weewahitchka and Freeport, Fla., and identified as *Nyssa biflora* Walt. These trees blossomed in April. A number of specimens were taken from the small upland ponds of Florida and Alabama and these were also identified as *N. biflora*. According to some beekeepers, the honey obtained from this species is not so desirable as that obtained from "white tupelo." The honey is darker and brings a lower price.



A branch of white tupelo gum; the male form, about half natural size, with matured foliage and full bloom. (Photo furnished by Wilder.)



In center, the female form, half size, full bloom, mature foliage. Above, a branch of the matured fruit, half natural size. (Photo furnished by Wilder.)

TABLE 1.—LIST OF COMMON NAMES OF TUPELO USED BY VARIOUS WRITERS

Scientific Name	Dorman (1)	Harper (2) 1928	Lovell (3) (1) 1926	Pellett (4) 1923	Small (6) 1903	Sudworth (7) (1) Wilder (8) 1927
<i>Nyssa sylvatica</i> Marsh.	black gum	black gum	sour gum pepperidge black gum	pepperidge Highland black-gum sour-gum yellow-gum tupelo stinkwood	sour gum pepperidge black gum	black gum sour gum tupelo pepperidge tupelo gum and 5 others
<i>Nyssa aquatica</i> L.	tupelo gum	tupelo gum (called <i>N. uniflora</i>)	white tupelo white gum cotton gum water tupelo tupelo gum swamp tupelo	tupelo gum cotton gum	tupelo gum cotton gum	tupelo gum white gum sour gum swamp tupelo tupelo swamp gum and 20 others
<i>Nyssa biflora</i> Walt.	swamp black gum	black gum	black tupelo black gum water gum water tupelo	water-gum southern black-gum water tupelo	black gum water tupelo	swamp black gum black gum sour gum tupelo gum lowland gum and 4 others
<i>Nyssa ogeche</i> Marsh.			Ogeche gum Ogeche lime wild lime tree gopher plum	ogeche plum wild lime-tree white tupelo		Ogechee plum sour tupelo gum lime white tu- pelo gum

(1) The first name in each group is given by this author as the preferred name.

In 1929 a specimen of "white tupelo gum," so called by J. J. Wilder, was obtained in the Okefenokee Swamp of Georgia. This was identified as *Nyssa ogeche* Marsh.

Nyssa ogeche is found in a rather limited territory, from the South Carolina coastal district, through southeastern Georgia into western Florida. It blooms in May.

Both Lovell (3) and Pellett (4) state that *Nyssa aquatica* is the tupelo which yields the immense amount of nectar in western Florida. They give but little credit to *N. ogeche* as a honey plant. None of the tupelo specimens sent to the Bureau of Plant Industry in 1931 and 1932 from Florida have been identified as *Nyssa aquatica*. While such evidence may not be conclusive, it strongly indicates that *N. aquatica* is not abundant in western Florida and that *Nyssa ogeche* is really the source of the valuable tupelo honey. Southern Louisiana and western Florida are in about the same latitude, and since *N. aquatica* blooms in Louisiana in early April, the same plant, if present in Florida, should also bloom in April, not a month later. The tupelo in Florida, commonly called "black gum" or "black tupelo," which blooms in April, must be the source of the nectar which produces the less desirable honey. Since *N. biflora* is through blooming in May, it may be presumed to be the source of the western Florida April honeyflow. Possibly there is also some *N. aquatica* present and in bloom in April which provides some nectar.

Nyssa aquatica L. is found in several areas in the vicinity of Baton

Rouge, La. It has been cut for timber wherever it is easily obtained, but near Port Vincent there are about 20 square miles of this species in the swamps of the Amite River. This tupelo blooms from about April 1 to April 20 and the staminate blossoms secrete considerable nectar. Large daily gains (seventeen pounds gross per day) have been recorded for experimental colonies at Port Vincent. Beekeepers near Pearl River, La., give *N. aquatica* as their major honey plant. They claim that the honey will granulate in about a year unless heated. The tupelo honey from Port Vincent granulated when it was placed in a cold room. Honey from *Nyssa ogeche* did not granulate under similar conditions.

Harper (2) says that *Nyssa uniflora* (*N. aquatica*) is abundant in southern Alabama and yields nectar. He does not give *N. ogeche* as occurring in Alabama.

Nyssa sylvatica Marsh. is another tupelo distributed throughout the Gulf States. It usually grows in low, moist areas in the uplands and along the streams. Some beekeepers of southern Alabama and Mississippi regard it as a fairly valuable honey plant. It usually blooms in late April and early May.

Soils

In an effort to determine whether tupelo grows in an acid soil or an alkaline one, a number of soil samples were obtained in tupelo locations and the hydrogen-ion concentration determined. The results follow:

Locality	pH Value	Plant
University Swamp, Baton Rouge, La.	6.4-6.7	<i>Nyssa aquatica</i>
Kenner, La.	6.5	<i>Nyssa aquatica</i>
Port Vincent, La.	5.8-6.0	<i>Nyssa aquatica</i>
Coryell Bayou, La.	5.0-5.2	<i>Nyssa aquatica</i>
Wakulla Co., Fla., Ocklockonee River	5.0	<i>Nyssa ogeche</i>
Walton Co., Fla., Choctawhatchee River	6.0	<i>Nyssa biflora</i> and <i>N. ogeche</i>
Gulf Co., Fla., Apalachicola River	4.6	<i>Nyssa biflora</i> and <i>N. ogeche</i>
Mobile Co., Ala., (small pond)	4.8-5.0	<i>Nyssa biflora</i>

The readings indicate that *N. aquatica* grows in soils which are less acid than the soils where *N. ogeche* and *N. biflora* are found. In Louisiana tupelo is generally found on soils called Sharkey clay; these are "heavy" and poorly drained. In Florida the soils where tupelos grow usually contain silt, clay, sand, and considerable organic matter.

Summary

It is evident from the specimens of tupelo collected and identified that *Nyssa ogeche* Marsh. is the source of the valuable tupelo honey of western Florida. Other tupelos, *Nyssa aquatica* L., *Nyssa biflora* Walt., and *Nyssa sylvatica* Marsh., seem to be major honey plants in some localities in the South.

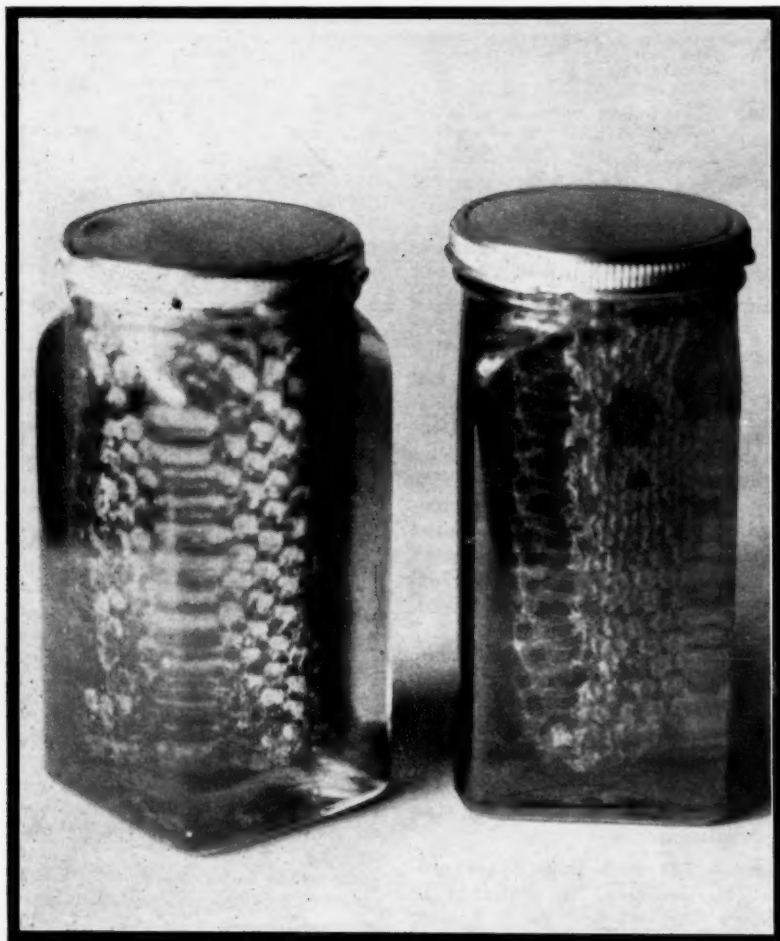
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The Container Helps Sell the Honey

By Alfred H. Pering,
Florida.



The cut comb jars and pack, described by J. J. Wilder in June, 1931.

THAT is a fine picture of chunk comb honey, put up in a one-pound glass jar, in your June, 1931, number. It is a true exhibition of publishing art. I venture to say that to make the comb honey show through the liquid honey surrounding it and through the glass, as this picture does, is not an easy job.

In this article Mr. Wilder tells of a new glass pack that boosts honey sales. His claims are well founded. I know, for I have tried them. After inquiring locally about where those square glass jars were made and where I could get them, I found they

were being manufactured right here in Florida. After some correspondence I learned that three sizes of square glass jars could be had in Tampa, so I secured a limited supply of one-pound, two-pound, and full quart, all square, clear glass with screw caps, American seal.

I packed some of my nicest, fairest combs of orange blossom and extracted honey and shipped a consignment back North by freight to my old home state of Indiana for my former retail merchant friend to put on his shelf in competition with good old Hoosier white clover product.

Did it sell? It did. I received repeat orders before I expected, and for favorable amounts, too. The quart size, with a half pound chunk of comb, seemed to sell the best. That is cheapest to buy and costs the beekeeper less to put up.

Mr. Wilder's claim then that the container helps to sell the honey is right. I think the attractive label I use and the fact that the combs are very white and that the merchant can claim the honey to be orange blossom from sunny Florida helps too.

I depart a little from Mr. Wilder's scheme of putting the chunk of comb in the jar. I want it square within the sides of the jar, and I cover one of the edges with the label. Were I ordering labels over again, I think I would get two different ones—a fancy label and one setting forth as much printed information as possible—and put the two on opposite sides of the jars, covering each of the cut surfaces of the comb.

It is my opinion that honey packed in these three sizes would sell readily without any label. Its appearance and attractiveness would appeal to the consumer. Were it not for the interstate commerce regulation that food products for interstate sale require the producer's or packer's name, the name of the product and its net weight, I would try a shipment without a label of any kind. They sell here quite readily without a label, on the local market, where markings for interstate trade are not required.

Mr. Wilder may be right in saying that in the use of the large size jars larger size chunks of comb honey should be used, because he wants the comb to reach from the bottom of the jar to the top, since, as he says, "the jar would otherwise show up a scanty pack, which would condemn it at once."

I do not quite agree with that, however. Up to the present I have found no difficulty in the sales of different sizes. I place the same size chunk in all the jars. The customer buying the larger jar gets more honey and less wax, and the merchant tells him so. Comb honey is higher in cost to the producer.

I use the Modified Dadant shallow frame and find the chunks cut from that width frame are just right for the one-pound jar. The chunk extends full length from top to bottom and the customer gets full measure of comb if he wants more comb than liquid honey.

One claim I make is that a thick comb shows up much better in all sizes of jars than a thin comb. I like ten frames to the Modified Dadant super. This gives as thick a comb as needed and shows up well in the larger jars. I cut them ten to the frame. This makes a hundred to the full super and takes about thirty pounds of extracted honey to fill one

hundred jars of the one-pound size. Of course, more extracted honey is needed in proportion to the additional size of the jars used. The customer has an advantage in buying if he wants more extracted than comb honey. If he wants as near all comb as possible, he has the one-pound jar; if as much extracted as possible, he buys the large jar.

I know consumers who buy comb honey, placing a chunk in the center of a deep vessel, and then pour extracted honey over it, leaving the chunk as long as possible in the serving vessel. They say in this way they do not feel like they are eating corn syrup.

Another thing: I hardly think it necessary to buy non-granulating honey to cover the combs. That might be necessary if your market was in the North and the selling season extended into the winter. Also, the size of your crop would have a great deal to do with whether you buy non-granulating honey to use. If you have to sell a part in winter, all right, but just as well use honey that does granulate for warm weather trade.

What About a Low Price Container?

But what has this to do with the subject? The reader may think it has little to do with the need for a low priced container. One might think the ideal container had been found by Mr. Wilder. He comes near being right at that.

I am highly pleased with them except for the following things: The price is high; they get broken in transit; some break easily while empty, a little nick making them unfit to use, as they leak if the lid does not fit just right; some are defective in their make; some lids give way when being closed down tight; washing in hot water will sometimes play havoc and cool water won't do the work right.

When packing for shipping, I find it necessary to crate or box the cartons they are originally transported in. This costs time and money. The filled jars also get broken in transit, according to the consignee. Also, when the container costs nearly as much as the contents, there is a real demand for a low priced container. So the jars Mr. Wilder described do help honey, but they cost too much.

I do not see why a can cannot be made for chunk comb honey, one-pound size, with a large enough mouth to admit a nice sized slice of honey and with a screw cap just like the glass jar. Why not?

I think that cans of half-pound, one-pound, two-pound, three-pound, or quart size could be used to advantage by the honey producer, the packer, and anyone having canning to do. The housewife could use the tin can with screw cap, American style seal. I do not see why she

could not use them with her cold pack method. They would not require soldering or sealing; the losses from breakage would be nil; the filled cans could be reshipped in the original cartons; they would weigh less and so transportation would be less both ways. They should cost less to make and it seems to me could be used by others than beekeepers and honey packers.

Just as attractive labels could be used or they could be lithographed as the friction-top cans are now. The present friction-top can cannot always be depended upon to hold, and one must take the precaution of using solder at about three points on the lid. The friction lid is harder to take off than the American style seal would be; also, the American style seal could be more lightly and more easily covered again and kept covered than the friction top.

I admit freely enough that the glass makes a finer display and helps the beekeeper sell his product, but the glass container costs too much. The customer would soon learn that he is getting just as fine an article in the tin as in the glass, and, size for size, it would be cheaper for him and ought to be more money to the producer.

The screw-top can would not require a can opener. We know there are can openers and more can openers—many makes and many qualities of can openers, and a few are of real merit, but there are not many cans that when once opened that way are ever fit to use again, while the screw-cap can may be used over and over.

They may be used for honey or any other product the housewife may wish to can. Her question will not be, whether to can or not to can? (Excuse me.)

Whether it is more profitable to bear the pain of cut or bruised fingers caused by those fearful contraptions called can openers or throw them all away and use screw-cap cans. From all points of view, a cheaper and more convenient container is much to be desired.

Morgan-Scott Meeting

The March meeting of the Morgan-Scott County (Illinois) Beekeepers' Association was held at Jacksonville on March 7 with about twenty present, among whom was Deputy Inspector Robins from Mt. Sterling.

Plans were perfected for a complete inspection of the area during the 1934 season. Short talks were given by Frank Pellett and Maurice Dadant. The 1933 crop of honey is well sold and the tone of the meeting was optimistic.

Lawrence Fisher,
Secretary.

For Timid Yet Inquisitive People

Visitors often want to see the bees (or pretend to) when they are not flying, or when the weather prevents opening the hive. I have been able to show them the bees by having one hive with an inner cover of glass. By using a flash light, the bees may be shown even at night.

S. F. Haxton,
Pennsylvania.

Curiosities of Bee Culture

From "The Beekeeper's Magazine," May, 1874.

To cure bee stings, hundreds of remedies have been offered, some of them very old. Pliny says Rue will cure stings of bees, hornets and wasps. He also declares that a tea made out of bees themselves will cure the sting when drunk. Baulme and Saurell, both leaf, bark, and berry, he says, will cure it. These may be good, but old Pliny goes further yet. "For the sting of bees," he says, "the owl is counted a sovereign thing by a certain antipathy in nature. Moreover, as many as have about them the bill of a wood-pecker when they take honey out of the hive shall not be stung."

* * *

An almost universal superstition is that bees should not be sold. This superstition takes various forms in different localities. In Ireland an old saying reverses the rule. "Bees must not be given away but sold; otherwise the giver nor taker will have no luck." In Devonshire, England, when bees are sold, payment is never made in money but in corn, etc., and the bees are always moved on Good Friday. In portions of Pennsylvania, it is believed that the seller must not be at home when the bees are taken away; if he is, the bees will not thrive.

A common superstition in England, France and Germany is that if the master of the house dies, the bees must be immediately informed of it. In North Germany they say to the bees, "The master is dead; the master is dead." They believe the bees will die, fly away or do no good unless so informed; and in portions of England, the hives must be dressed in mourning for the same reason. In Lithuania the bees are informed of the death in the family by rattling the keys at the entrance. In Bradfield, England, bees are always invited to the funeral. A worse superstition still is that all the hives must immediately be removed to another stand on the death of a member of the family; and another that the moment the corpse is taken out of the house, the hive must be turned over.

Contributed by M. S. Jones,
Virginia.

Invention of Foundation

By Frank C. Pellett.

THE invention of comb foundation ranks with movable frames and the extractor as one of the three most important in the history of bee-keeping. The process of manufacture has been slow in reaching the present day perfection and many persons contributed something to its development.

Gottlieb Kretchmer, a German, appears to have been the first to make use of artificial foundation. In 1842 he made foundation by dipping linen tracing cloth in beeswax and starch and passing it between engraved rollers. The starch was to prevent the wax from sticking. The bees finding the fibers of the linen when working the bases of the cells tried to remove them and thus destroyed the foundation. But little notice was paid to this attempt in later years.

When Langstroth invented his movable frame hive he spent much time in an effort to find a means of insuring the building of straight combs in the frames. The result was a triangular guide at the top of each frame to induce the bees to start building there.

In 1857, Johannes Mehring invented a press to impress wax wafers with the indentations common to the bases of the cells. No projections were provided for cell walls and the product was very crude in comparison to present day foundation. A Swiss apiarist, Peter Jacob, improved the Mehring press and some of his foundation came to this country in 1865.

Samuel Wagner, founder of the American Bee Journal, made some attempts to manufacture foundation, adding side walls to the original type of foundation. In 1861 he took out a patent on the manufacture of artificial comb foundation but he was not successful and after a time he dropped the matter.

In 1876, Frank Cheshire published directions for making foundation with moulds made of plaster of Paris, but nothing of value came from this.

In that same year A. I. Root employed a man named Washburn to develop metal rollers, making the impressions by hand with metal punches. This idea of metal rollers solved the problem of wax foundation and had Kretchmer made his first at-

tempts directly on the wax instead of using linen as a base he might have succeeded.

There is some question as just where to draw the line in making a proper division of credit in the development of foundation since so many contributed something. There appears to be no question as to the fact that Root finally solved the problem of making a practical application of the principle. However, King Brothers secured the first patent on rollers. These were mere wheels an inch and a half wide and were used only to stamp wax that had been run on wood for guides.

In early editions of "Cook's Manual" he credits Frederic Weiss with the invention of the machine which brought foundation into common use. His rolls were about six inches long with shallow grooves between the pyramidal projections so that shallow side walls were raised between the cells. Cook states that it was on this machine that the foundation was made by John Long in 1874.

In 1879, D. S. Given described a press which he had made for the purpose of producing a sheet of foundation in a frame ready wired. Given's press was made of metal and gave fairly good results and was widely used for a time.

The difficulty of sheeting the wax was far behind the impressing of sheets and numerous attempts to solve the problem were made before a satisfactory method was found. Mrs. F. Dunham is credited with having improved the mills so that the foundation would have a thin base and high side walls. About that time J. E. VanDusen made a machine to make a flat bottom foundation which met with some favor a few years. J. Vandevort built mills which were more perfect than any which had appeared up to that time and enjoyed a considerable reputation on that account for many years.

In 1892, E. B. Weed attempted to build a machine to make endless sheets of wax for use in making the impressions by means of the rollers already developed. His first machine resembled a sausage filler but had to be refilled so often that little could be done with it, as the product was

very irregular. Two or three years later he perfected the machine which came into common use. This new Weed machine forced molten wax through a narrow slit in the form of a ribbon which was wound on a spool. This solved the one remaining difficulty and millions of pounds of foundation have since been manufactured by the so-called "Weed" process.

Here Is My Plan for "Over Controllitis"

By George Williams,
North Carolina.

After reading J. W. Braithwaite's article in March, I give you my plan along this line. In the latter part of the summer after the honey crop is off, I leave every colony in two stories or with at least a shallow extracting super if I do not have enough full depth. They have plenty of honey and a good queen.

Then in October and early November I look them over to make sure they are all right; I wrap them with a heavy grade of brown paper the right length to surround the hives and tie at the bottom with twine. A bag of dry leaves is poured in on top and around the sides. The paper is folded together on top and covered with a rough board which I use in the summer for shade boards. They are weighted down with stones so they will not blow off. The entrances are closed to three-eighths of an inch.

I leave them alone until the weather warms up in the spring and the entrances need to be larger. The paper wrapping is not taken off until the latter part of April near the beginning of the main honeyflow. My first job is to look for queen cells and to prevent swarming. I do this without disturbing the bees by prying apart the two stories and looking along the bottom edges of the upper combs. If no cells are there and conditions are good, the hive is let back in place. This is the only handling I do till the flow starts.

I then reduce the colony to one story, add supers, placing the extra bodies on the weakest colonies so the



extra brood given will make them strong and the bees will fill them with honey to be returned at the close of the season.

Like Mr. Braithwaite, when I began beekeeping I handled the brood and frames every week. I thought if I could keep the bees from swarming, everything would be all right but I found the results different from what I expected. Of course I prevent every swarm I can but it certainly takes something besides going through the brood nest every week to do it.

Unnecessary handling of bees makes a lot of work without any results, in addition to the harm it does by chilling brood and starting robbing.

Queens As a Producer Sees Them

By Frank Beach,
Idaho.

Josh Billings said: "When a man comes to me for advice, I ask him what kind of advice he wants and then I give it to him; and he and I are two of the smartest men living." When a queen breeder asks me what kind of queen I want, I tell him.

Most of the literature about queens in our bee magazines has come from the queen breeder. He has talked about prolificness, color and gentleness and has sometimes advocated prolificness above everything else. Some have said that honey gathering qualities are sure to be combined with these three features. One prominent queen breeder for years advertised his bees for gentleness, color and size, and he considered with those qualities he had everything desirable. Of late years he has switched to the idea of prolificness and now claims his bees are bred for this desirable trait. I bought a breeding queen from him several years ago. I thought I was going to get something fine for \$10. The queen was beautiful, large, had a fine color and her offspring were gentle; but I was disappointed in the amount of honey brought into her hive. Consequently I have lost confidence in that man as a queen breeder for the commercial producer.

I bought package bees for several years from a queen and package producer. One year he sent me packages that, when the progeny of the queens got to flying, came out to meet me as soon as I came in sight and followed me a long way toward my home when I left. The next year I ordered queens and packages from another breeder.

The gentleness of a queen's offspring is very important to the commercial honey producer. He puts his

bees on rented locations, and in an irrigated country most of the locations are near cultivated fields where at times the bees may cause trouble and use their weapons indiscriminately. Then the owner of the bees is invited to move them. Moving is expensive, and where is he to go with those cross bees?

I believe that a queen breeder should make gentleness of bees his first objective. After the cross ones are eliminated from the queen yard there should be plenty of fine queens to choose from for size, color, prolificness and honey gathering. Dr. Miller selected his queens at one time with the idea of prolificness foremost. He got a yard of cross bees and gave up the selection of queens without first considering the gentleness of the bees. Gentleness must always be thought of if we are to select our queens with a view to eliminate cross colonies.

Bees Spell It Out



I send you a picture of a novel comb honey construction. The idea was prompted by a picture of a Cocoa-Cola ad made with comb honey which appeared in the American Bee Journal. I used this display for advertising by showing it to the stores that handle my honey and found it quite an attraction. The story that went with the display told how the bees had worked in the flowers surrounding my honey sign until they had learned to read and write. However, they made one mistake and left out the "E" in my name. I expect to try another built-up comb honey sign next season to advertise for the Colorado Honey Producers' Association.

James A. Dutcher,
Colorado.

Granulation of Bottled Honey

In regard to the trouble that S. F. Haxton, of Pennsylvania, has with his bottled honey not granulating evenly after heating as he states in his article in the March number, I wish to say I had the same trouble three years ago and I have recently solved the problem with the aid of my laboratory.

When honey is heated to say 160 degrees Fahrenheit, the different ingredients such as dextrose and levulose have a tendency to separate. For instance, the dextrose will go to the top and the levulose will settle to the bottom or vice versa so when the honey is poured in the bottles, some of the honey will contain a larger per cent of dextrose than others and some less.

In other words, the bottles will not all contain the same proportion. Since the dextrose sugar crystallizes quickly and the levulose sugar is easily injured by heating, the bottles that contain the larger percentage of dextrose will granulate more quickly than the ones with less percentage. As you lessen the amount of dextrose the longer the honey remains liquid.

The best way to prevent the trouble is to stir the honey well before bottling it. Mix the top with the bottom as you would stir milk that the cream has raised on. I have practiced this myself and have found very good results.

Glenn L. Hargitt,
California.

The Sting of Conscience

"What weapon can be nearer to nothing than the sting of a bee? Yet what painful wound hath it given? That scarce visible point—how it invenomates and rankles and swells up the flesh. . . . And if I be thus vexed at the touch of an angry fly, Lord, how shall I be able to endure the sting of a tormenting conscience."

W. H. Hull,
Virginia.

Honey and Black Walnuts

In the last few months there has been considerable comment in the pages of the Journal about the combination of honey and black walnuts. L. K. Hostetter, vice president of the Pennsylvania Nut Growers' Association has written: "Honey and black walnut meats make a very good sandwich spread. I use three pounds of honey and one pound of black walnut kernels which have been run through a meat grinder, using the finest knife. By adding more vegetable powder to the mixture to prevent stickiness I get the best chocolate centers I have ever eaten."

Caging the Queen in the Colony

By W. A. Rowland,
Canada.

IN a recent edition of one of the Journals, this question was asked: "Does a queen suffer any ill effects from being caged among her bees during swarming season?"

The question is an interesting one and brought back to our minds the results of careful observations made in this regard over several years. One of the simplest manipulations advocated in some of the books of instruction for the prevention of swarming is to cage the queen on the appearance of swarm cells, cut out or remove thoroughly all cells, then seven or eight days later again thoroughly remove all cells which leave the colony without any brood young enough to raise a queen, and three days or more later release the queen. While in the question, no reference was made as to its effectiveness in the prevention of swarming or to its result upon the colony as well as upon the queen in this caging, it is interesting to note these results as well.

Does It Prevent Swarming?

We answer emphatically "No, not under conditions of a short and rapid honeyflow, such as we usually have." Let us see what is happening in this regard from the moment of caging. The bees continue to build cells as long as larvae are obtainable; the queen is still there—though not at liberty—and in a few days again, out goes the swarm; sometimes this happens every two or three days or oftener; no queen accompanying, the swarm usually returns to its hive unless, as we have had it happen, it meets up with a swarm from a neighboring hive when all unite and return to the one hive. Should the honeyflow be in full swing when the queen is released, the swarm will invariably issue shortly thereafter and an examination of the colony one week after the releasing finds it queenless, and almost broodless, nine times out of ten. In our experience, if the releasing is done when the flow is tapering off, or during a slow honeyflow when the swarming fever is not generally so acute, the colony may not swarm but even under these conditions it cannot be relied on with certainty. Some have claimed that the duration of time during which the queen is caged has some bearing on its effectiveness but it has never worked that way with us. We have kept colonies queenless this way for two weeks, and two hours after the queen was released had the swarm issue.

Effect on Colony

During the first week after caging, new cells are built. Since conditions are somewhat similar to a parent colony after swarming, there is but little slowing up in storing; but after the cells have been removed on the seventh or eighth day, the colony commences to "loaf" or "hang out," and this loss of "morale" increases as the days go on thereafter. Even under these conditions, should the colony be exceptionally strong such as requiring three or four comb honey supers as well as the brood chamber to contain the bees, considerable will be stored but if under strength, work is at a standstill. Seemingly the bees are beginning to realize their condition is growing hopeless, consequently why store surplus? In two weeks much of the brood has emerged and the vacated cells filled with honey which should have gone into the supers. Should the released queen be accepted at this stage she will not lay for several days thereafter, and the colony is thus without new brood for nearly three weeks thus losing many thousands of bees which would be of use in building up and storing for winter, as well as gathering the dark honey. This weakening of the colony is the most serious result. Sometimes, too, some colonies after being queenless so long, are difficult to requeen, seemingly taking a dislike to any but their own raising and if on this account the queenless condition is extended, laying workers start up business. That colony's chances of wintering are pretty slim.

The Effect on the Queen

All our observations confirm this—that caging a laying queen among the brood in the hive results in definite injury, and the longer the period, the greater the injury. If caged for a week only, the damage is not very marked; the queen is readily accepted and goes to work in a day or two. If caged for two weeks or longer, the released queen appears no longer vigorous, generally slow in her movements, is longer in commencing to lay, and does not produce as much brood as a queen normally would. She is comparable in every way with a queen that has "aged." Often the colony is very antagonistic in its actions towards her; possibly in their judgment she is no longer what might be termed a good queen, and their judgment is vindicated in this one thing that should she last the winter, she will be invariably superseded the following spring after producing con-

siderable drone brood or, in other cases she does not last the winter out and fruit bloom finds a very weak queenless colony, often with laying workers; our colony records on such cases are definite and conclusive and admit of no question as to this.

In seeking the cause of this injury our first thought was that it might be due to compelling the queen to discontinue laying; but this could hardly be so since a queen normally ceases laying in the fall and produces no brood for several months, working this way for several years. Indications seem to point, however, to two factors, either one, or possibly both, being responsible for the injury and in the absence of any other reasons it is all we have to advance; the first being that, while bees will feed a caged queen for a while there comes a time when their interest in this respect begins to wane and after a certain period she is neglected altogether; just how long this period would be we are not certain, but we have had it happen in a month; and the second factor is this, that it would not be unreasonable to say that a queen would gradually wear her strength out being in such an unnatural imprisonment, constantly trying to reach the adjacent brood combs to carry on as she wished.

The Better Method

If you must dequeen, and value your queen, do not cage but remove her together with the comb of bees and brood to a nucleus where she can carry on in a natural way; later, reunite with the parent colony or use where desired.

Standardization: Not Profits

By the Late Chas. D. Stuart

Out of the financial disaster that has overtaken the Honey Producers' Association of our State, at least one asset can be salvaged, even though it might, in the language of accounting, be termed intangible. This asset lies in the lesson to be gleaned from the beekeepers' depressing experience.

The late Edward Carman, founder of the RURAL NEW YORKER, and a pioneer organizer of successful marketing organizations, insisted with increasing earnestness, that the only function possible for a producers' association is standardization. The meaning of standardization proves or disproves the logic of the thesis Carman held to so unselfishly during the

closing years of a ripe experience in beautifying rural life.

As I interpret the word, standardization includes two essential functions: the guaranteeing of quality, and the continuity of shipments. Guaranteeing the quality of a product is simply grading it. Table qualities in honey do not necessarily depend on color; but the marketing demand does, and therefore sets the standard of grading.

Standardization of marketing by guaranteeing a continuity of shipments can in no wise be construed as juggling with the law of supply and demand. But it does require withholding a crop from being rushed on the market at a time when producers must have money. It is therefore business-like for producers to organize in an attempt to prevent the excessive artificial supply thus created from breaking prices and reducing profits for the time being.

Someone must hold honey in bulk, not for profit, but to meet the consumers' demands, which are year-long and continuous. Here is where the leading organizations of fruit-growers

are winning out in marketing their products. They certainly haven't been able to control the law of supply and demand. Even a nation as wealthy and productive as the United States signally failed in this attempt. But they can standardize the supply of their products, by making carload shipments certain and continuous throughout the year, thus stabilizing prices.

The cupidity of human nature lures us into organizations that appeal to our gambling instincts, our desire to get rich quick. The disasters this impulse invite are only logical. Most of us, however, learn only through disaster. If we can but turn again to the State Beekeepers' Association, and give it confidence, enthusiasm and counsel, we shall sooner or later realize that this organization is the logical agent for standardizing honey production.

It appears to me that a most logical and helpful objective in reorganizing the State Association is implied in the slogan:

Standardization : Not Profits.

Honey Bar a Popular Confection

May Serve as Outlet for Some of Surplus Butterfat

By P. H. Tracy, Department of Dairy Husbandry,
University of Illinois, Urbana, Illinois.

AN extremely palatable and nutritious confection has been developed at the University of Illinois that has proven to be a popular seller among the college students during the winter months. This product is called a "Honey Bar" and is made from a high test sweet cream, strained honey, with either grapenuts or fruits added in generous portions and is chocolate coated.

High Test Cream Necessary

A cream testing 75-80 per cent fat should be used. A cream of this test can be secured by separating milk at the pasteurizing temperature using a separator equipped with special tinware for handling heavy cream. The separator used in this study was a Number 32 De Laval. With the larger separators it may be possible to separate a cream of high enough test without the special tinware, provided the screw adjustment is set for high test, and if the rate of inflow of the hot milk into the bowl is reduced from a third to a fourth. As shown in a previous investigation* the fat loss in the skim milk from a high test cream separated from hot milk is negligible.

*Bulletin 387, University of Ill. Agr. Exp. Sta. "How to Make Honey Cream" by P. H. Tracy.

Honey Should Be Heated

There are many types of honeys available but the light colored and mild flavored ones, such as sweet clover, are to be preferred. Heat the honey to 155° F. momentarily to destroy any enzymes that may be present. Unless destroyed, the enzymes will cause a hydrolysis of the butterfat producing rancidity. The honey can be cooled to 125°-130° F. before mixing with the cream.

Mix Honey and Cream While Warm

While the heavy cream is still warm mix it with the warm honey in the proportion of three pounds of honey and seven pounds of cream. Place in 20-quart cream setting cans.

Cool Honey Cream Mixture Before Adding Flavoring Materials

To prevent the added grapenuts or fruits from absorbing moisture the cans containing the honey cream mixture should be placed in ice water for about an hour. This stiffens the honey cream and prevents the added flavoring material from being tough in the finished product. The honey cream should not be permitted to solidify or become too firm before the flavoring materials are added, as the agitation necessary to make a

homogenous mixture will churn the butterfat.

The purpose of adding the flavorous materials is to add variety and to reduce the richness of the high fat and honey mixture. Pineapple fruit in the form of small wedges or shreds has proven popular. The fruit should be colored red or green and may be flavored with mint. Cherries may also be used.

Peanuts are successful if extreme care is taken to prevent them from getting tough. Probably the most popular honey bar is the one containing grapenuts. The crunchy sensation of the grapenuts that results when biting into the bar, together with their nutlike taste and their relative cheapness makes them a desirable blend in the mixture of honey and cream.

The proportions of flavoring found satisfactory are 3.5 pounds of fruit per 25 pounds of honey and cream mixture and 1.75 pounds of grapenuts per 25 pounds of honey and cream mixture.

Ice Cream Pans Used for Hardening

After the flavoring material has been added to the honey cream the mixture is poured into ice cream brick pans for solidifying. Pans made with partitions for use in the manufacture of chocolate coated ice cream are to be recommended. The pans used in our laboratory make slabs approximately 1½ inches wide, 3¼ inches deep and 26 inches long. The pans are placed in a hardening room for at least 10 hours after which the slabs are removed, placed on pan lids that are covered with parchment paper and returned to the hardening room until ready to be cut.

Slabs Must Be Cut by Heating Knife

The consistency of the chilled slab is such that the knife used to cut it must be heated. This can be accomplished by dipping the knife occasionally in hot water. The slab is cut into pieces ½ inch thick. This makes a bar 3 3/16 inches long, 1¼ inches wide and ½ inch thick.

Regular Coating Chocolate Used for Dipping

An ice cream bar coating machine may be used for dipping the bars or the dipping may be done by hand. The coating chocolate should have a temperature of about 110° F.

Yield

About 1160 bars will be secured from 100 pounds of the slabs. Approximately 25 pounds of coating will be needed for each 100 pounds of slabs. To make the 1160 bars will require, therefore, the following materials:

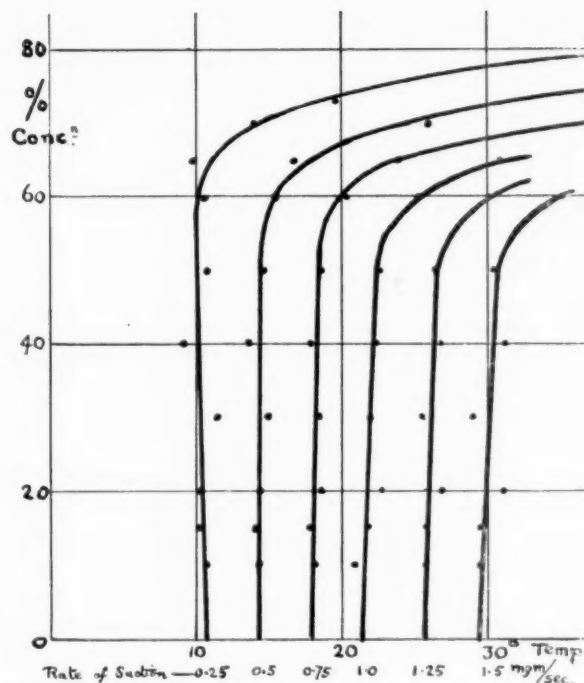
(Please turn to page 324)

How Fast and How Much Can a Bee Suck?

By Annie D. Betts,
England.



Miss Betts, Editor of the "Bee World", England, studies her bees with the eye of the trained scientist. This article is quite interesting as it shows us reasons for the differences we observe and find hard to explain.



The amount of syrup the bee takes in a given time depends on temperature. This Figure, No. 1, shows the relationship.

THIS heading recalls the old wag about the woodchuck. Yet it is a matter of quite serious importance to honey producers.

Though the actual time spent by a foraging bee in sucking must be small, it is plain that she can collect more nectar if she is a quick sucker than if she is a slow one. Also, she will be able to gather the same amount during a more leisurely trip, thus wearing herself out less quickly. Either way it is to the beekeeper's advantage that his bees should have a rapid rate of suction.

Quick suction has other advantages. In early spring, water bearers that can fill up fast will not need to be out in the cold so long and the loss of bees will be smaller. The same applies to bees on the outside of the winter cluster in hard weather, bringing honey in for the needs of the colony.

There is perhaps the disadvantage that quick-sucking bees will be more efficient robbers, being able to fill up and escape faster than the average bee. But then robbing is generally the beekeeper's fault. On the whole, rapid suction is an advantage.

The same applies to the capacity to carry a large load of nectar. In 1922 Dr. Merrill showed that, other things being equal, bees with big honey sacs are better gatherers than bees with smaller ones and that a large sac is more important than a long tongue. In spite of this suggestive result, little work has been done on either the capacity of the honey sac or the rate of suction, and many bee books go on repeating the

old story about the importance of tongue length and make little reference to the more important matters.

About 1905, a French beekeeper, Gendot, observed bees fetching water and noted how long they took to fill their sacks if the water was kept at a certain temperature. Table 1 gives his results. The bottom line (one hundredth time) is obtained by dividing 100 by the time in seconds, and gives a figure proportional to the rate of suction, if we assume that all the bees filled their sacs equally full.

Most measurements made until recent years indicated that bees did not carry more than about 20 to 25 mgm. of nectar home. Apart from experiments with syrup, this appeared to be the forager's load. Lundie was one of the first to throw doubt on this. He found a maximum average load, on a good flow day, of 25.3 mgm. and noted that this result must be less than the actual average forager's load.

In 1921 Armbruster measured the actual volume of syrup fetched by bees visiting a drinking fountain and obtained an average load (on a hot day, with fairly strong sugar solution,) of 57.77 c. mm. Von Frisch in 1927 obtained one average of 61 mgm.—a comparable figure.

Recently a paper by A. F. Gubin has appeared in the Russian bee journal, *Opytnaia Paseka*, reminding us that Plateau, as long ago as 1865, said that the capacity of the honey sac was 78 per cent of the bee's own weight—a result he confirms. He describes observations made in 1922 on bees visiting a supply of syrup,

in the course of which he observed an average load of 69.56 mgm. The observation extended only over two days (6th and 7th of September). There is no reason to think they are other than trustworthy.

My own results, based on work extending over two years, are similar. My best average, taking only cases where at least twenty bees visited the syrup, was 66.6 c. mm. This is therefore in satisfactory agreement with the other investigators. Such large loads are only taken up if the syrup is fairly concentrated and the temperature high; the latter is the more important condition for large loads.

Gubin's bees appear to hold the world's record, so far, for big loads. Like myself, he weighed individual bees; one of them actually flew away with 99.2 mgm. load. My champion bee took 90.8 mgm., but her performance was in a way better than that of Gubin's bee, for she weighed only 74.1 mgm. unladen (his weighed 93.4 mgm.), so my bee was carrying over 122 per cent of her own weight.

Gubin also gives the results of weighings of outgoing and homecoming field bees by other Russian workers. Tuenin obtained average loads of around 38 mgm. in this way. Mikhailoff, working on a day when there was a very heavy honeyflow, observed an average of 48.7 mgm. As the scale hive that morning showed an increase in weight of 5.74 kg. (over 12½ pounds) between 9 and 11 a. m., we may take it that this figure is rather exceptional.

My own few observations confirm

the above results. During the heavy honeyflow of August, 1930, on a day of fairly good flow, I obtained an average weight of incoming bees of 125.4 mgm. Outgoing bees were not averaged that day, but their weight would lie between 85 and 100 mgm. So the average load was at least 25 mgm. Two of the bees weighed over 140 mgm., so it is plain that the large figures obtained by Mikhailoff are quite possible. The average weight, in such case, depends, as Gubin rightly points out, on the state of the honeyflow rather than on the bees' carrying ability. The latter is best measured by experiments with syrup, such as were made by Armbruster, Von Frisch, Gubin, and myself, as already given.

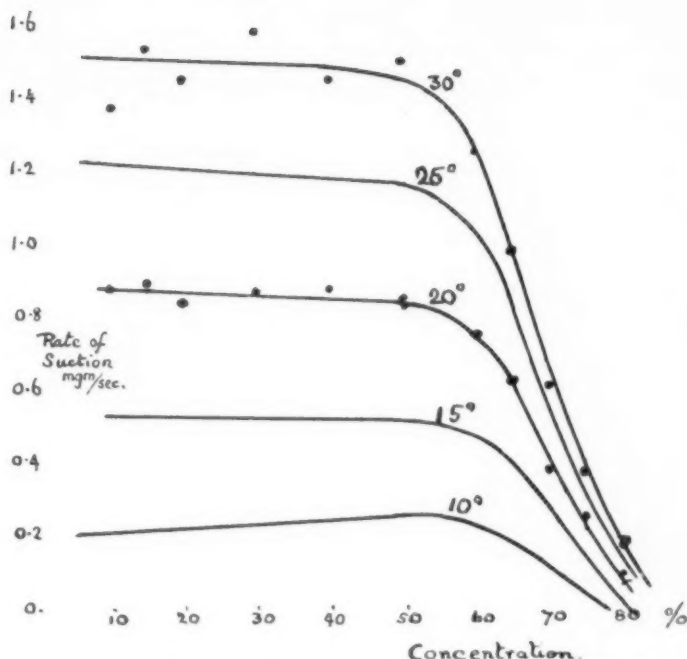
In 1927 and 1928 I made a considerable number of observations on bees visiting a supply of cane sugar solution of known composition, from 10 to 80 per cent by weight, and found that very approximately the rate at which a bee can suck is proportional to the excess of the temperature above about 45° or 46° F.

It is not possible to state that this law holds at temperatures below 50° F., for at these low temperatures bees drink intermittently, with many pauses, as if they dislike the cool syrup, and it is difficult to time them accurately. (To obtain the rate of suction it is necessary to weigh the bee before and after she has filled her sac—by placing her in a small box made of waxed paper—and time her with a stopwatch while she is drinking.)

A bee can absorb about 50 per cent of the syrup, figured from experimental data, eight times as fast at 90° as she can at 50°. The moral as regards wrapping up feeders is obvious. (See Fig. 1.)

The rate of suction changes little with increasing concentration of sugar in the syrup until the 50 per cent mark is passed. Above this, however, there is a sudden and rapid reduction in the rate as the percentage of sugar is increased. (See Fig. 2.) A bee can absorb 50 per cent syrup from four to six times faster than 75 per cent. (See Fig. 1.) The former is equivalent to a good sample of nectar, and the latter to well ripened honey. Cane sugar syrup is more viscous than a mixture of dextrose and levulose, so that 75 per cent with 25 per cent water (in viscosity) resembles honey containing only 20 per cent water. There seems little doubt that the cause of the reduction in the rate of sucking is due mainly to the fluid friction of the stream of syrup going up to the tongue in the proboscis and neighboring parts.

If bees are watched drinking thick syrup, they will be seen to spread apart the mouth parts until the pro-



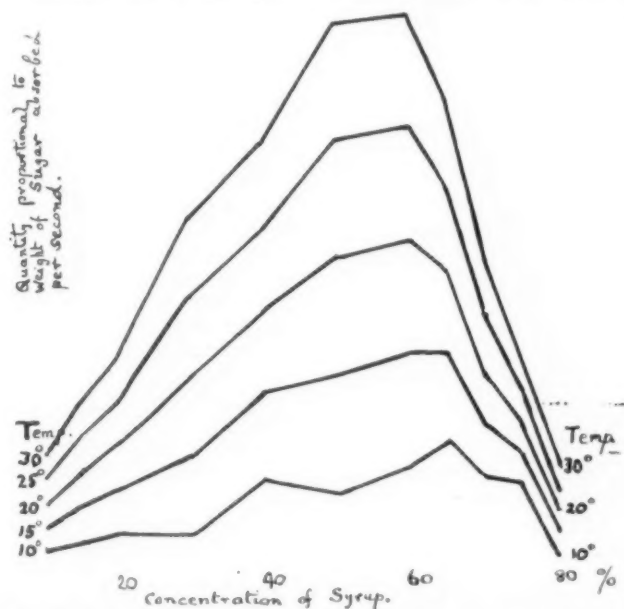
Relation between the concentration of syrup and the rate at which the bee is able to take it. Figure 2.

boscis resembles a kodak tripod, with four legs. The syrup can be seen ascending in a sort of conical stream. When taking water, on the other hand, bees keep the parts pressed together into a narrow tube, inside which the tongue works up and down like a bottle brush, almost as if to prevent the tube from becoming clogged.

When getting nectar out of flowers with these tubes, the bees must also drink in this way through the whole length of the tongue. Now by making bees fetch syrup from a narrow crevice instead of a large drop, I was able to show that the rate of suction is reduced when the pro-

boscis parts cannot be spread out—but only if the concentration of sugar is about 50 per cent. This indicates that the viscosity of the syrup is too low to inconvenience the bees below 50 per cent, but that when the stronger concentrations of syrup are being fed it becomes large enough to slow up the sucking process.

Bees suck apparently by the movement of the pharynx, which resembles a pair of bellows. If the friction of the syrup is too large, the pharynx is not strong enough and has to slow down much as the driver of an automobile has to change gear on running from a good surface to a sandy one. The bee can reduce



Quantity of syrup taken proportional to weight of sugar. Figure 3.

Table 1

Temp. ° C. -----	10	15	20	25	30	35	40	45
Time, secs. -----	178	147	87	62	42	38	29	24
Temp. ° F. -----	50	59	68	77	86	95	104	113
100/Time -----	0.562	0.680	1.149	1.613	2.381	2.632	3.448	4.167

the resistance to the syrup a good deal by spreading open the tongue parts, but with syrup over 50 to 60 per cent this is not enough to overcome the resistance, which increases rapidly with concentration, and thus the rate of suction is reduced. (Fig. 2.)

The concentration of syrup from which bees can get most sugar per second (or per hour) is about 56 per cent. This assumes that the feeder is kept at or above 70°. If it is cooler, 60 per cent is better. We can say that, in practice, 60 per cent syrup is the right strength for feeding—that is, nine U. S. gallons of water to one hundred pounds of sugar. Syrup stronger than this is taken down more slowly and appears to be wasteful of bee time and strength.

If bees must suck at a crevice, however, instead of a large drop of fluid, and so cannot spread their proboscis, the best strength seems to be about 50 per cent. Now Park (U. S. A.) and Beutler (Germany) have shown that nectar often reaches stronger concentrations than this in hot, dry weather, while in wet weather it is more plentiful, but the concentration may well be below 50 per cent. In wet weather, bees will take longer to gather an ounce of sugar because they have to gather a great deal of the plentiful but poor quality nectar, while in dry weather they will take a long time to bring home an ounce of sugar, because the nectar is concentrated and they are only able to suck slowly.

Days when the humidity is such that the nectar is a 50 per cent sugar solution would seem to be ideal for a heavy increase in the weight of the hives.

The flow of nectar from flowers whose nectar is hidden in narrow tubes, like clover and many composite flowers, should be affected adversely by drought more than that from flowers having freely exposed nectar like basswood. There are, however, other things to be taken into account, so that this effect may not always be perceptible.

Two interesting facts about the flight of heavily laden bees are not as well known as they should be. All beekeepers are familiar with the sight of a robber, hanging about outside the hive with its hind legs trailing astern. She is empty. Homecoming foragers, on the other hand, with a good load, fold their legs forward as if they were saying grace for their big meal.

Some years ago I found the third legs weigh about 4 mgm., while their center of gravity can be shifted through about 5 or 6 mm. by moving them from right back to right forward. So this way a bee is able to counteract part of the tail-heaviness produced by a big load in her sac, as Von Frisch has pointed out.

Another point concerns the belief that bees make themselves lighter in order to fly, by inflating their abdominal air sacs. Bees do go through respiratory movements before flying, but there is a doubt that they do so when full of syrup.

The air sacs lie on either side of the honey sac. When there is 90 mgm. of syrup (a volume of 70 cmm. or a sphere one-fifth inch in diameter) in the honey sac, there is not going to be room for thorough inflation of the air sacs. On the other hand, they would serve admirably to cushion the half full honey sac and prevent it swinging about inside the bee if she swerves in flight.

That full inflation of the air sacs makes the bee lighter is a myth. It grew up because Cheshire and other bee anatomists of former days were not skilled in physical calculations. They never worked out the sum, the result of which shows that under the most favorable circumstances the bee could not reduce her weight by so much as one-five-thousandth part in this way.

The bees' air sacs are not gas bags. They are—to continue the airship metaphor—ballonets; that is, they contain air to fill up the space later to be occupied by some other fluid—in the airship, the expanding gas; in the bee, nectar she is going to collect. As the space occupied by them is requisitioned, the air is gradually expelled.

When the bee gets home, she breathes energetically. This, I would suggest, is to fill the sacs and squeeze the contents of the honey sac up to her mouth to transfer it to a store bee. She empties her sac, in fact, as we squeeze tooth paste from a collapsible tube.

Anyone wishing to repeat the experiments is advised to consult *The Bee World* of September, 1929, and August, 1930, which gives more detail and a description of the apparatus and methods. There is still plenty to learn about how bees suck for anyone wanting an interesting—and at times downright amusing—piece of research.

Fee for Government Exhibit

Recent issues of the bee journals announced the availability from the Office of Exhibits, U. S. Department of Agriculture, Washington, D. C., of a new small portable exhibit showing the chemical components of honey. The announcement was to the effect that the exhibit could be borrowed from the Office of Exhibits without cost other than the payment of transportation charges from Washington and return.

The demand for the "Honey" exhibit has been so heavy that it presents a serious problem in renovation and maintenance. It so happens also that the funds of the Office of Exhibits and of the Bee Culture Laboratory, which cooperated in furnishing some of the materials, have been so seriously reduced that it will be impossible to carry out the original plan to lend the exhibit without cost. In view of these difficulties and in order that the exhibit may still be available, henceforth it will be necessary for each borrower to deposit with the Office of Exhibits the sum of \$2.50 to take care of the average wear and tear and in addition an amount sufficient to cover transportation of the exhibit to and from the exhibition point.

Upon receipt of a communication from any party wishing to use the exhibit, the Office of Exhibits will send an application blank which the borrower is to fill out and return.

Jas. I. Hambleton,
Sr. Apiculturist.

Bees for the Beginner in Massachusetts

This is the title of Extension Leaflet No. 148 issued by the Extension Service, Massachusetts State College, Amherst, Mass., and written by Claude R. Kellogg, Department of Entomology. It covers starting with bees; preparation for the year's work; care of the bees through the year; bees in orchards; the production of both comb and extracted honey; the rearing of queens; and a consideration of bee diseases.

Those interested can obtain a copy from the Extension Service, Massachusetts State College, Amherst, Massachusetts. Ask for Extension Leaflet No. 148.

Samuel Purchas Says—

"When two swarms settle together, and eagerly bid defiance each to other (this falls out seldom, yet sometimes) always expect a martial and deadly skirmish."

W. H. Hull,
Virginia.



By G. H. Cale

WE have tried the feeder described by John Mavie, the Brother Adam's feeder. They certainly do make a package or a divide grow when kept supplied with syrup. If the arrangement for rapid feeding is used, it is easy to get the colony "syrup" bound. Slow feeding is better.

As feeders for normal full sized colonies, I am not quite so satisfied with them. Yet others who have tried them like them very well for this purpose. They are an improvement over most other previous types of feeders.

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A season like this is very discouraging. The drought affects most of the sweet clover territory. It is lucky that sweet clover is a dry weather plant or there would be no honey at all in this area. There is bound to be a short crop at best. Most of our bees have been moved a distance from their usual locations, to locations where sweet clover should give some honey. Some beekeepers report feeding bees up to date and are fearful of having to dispose of them to save expense or else of having to seek pastures where they can at least make a living. Many beekeepers will be severely hurt by conditions this year.

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Honey being scarce, the average price should be better than last year. There will be some hope in that for those who do have honey.

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In Gleanings for March, Dr. Merrill calls attention to the ease with which the capacity of queens may be misjudged. In Kansas, when Dr. Merrill was there, queens were swapped between colonies of different strength. Queens formerly in weak colonies showed up to be the equal or better of good laying queens in strong colonies. We have a habit of marking colonies in which the queens are apparently poor. Many times, in the later season, when examining these colonies again with the idea of requeening them, the same queens are found to be entirely different and must be judged on second examination to be good prolific queens.

— o —

That brings up the question of when and how often to requeen. In regions of small honeyflows with

plenty of rest periods, requeening only as queens become poor and of little remaining value is the best practice. Where the honeyflows are heavy, in the average year, and the queens have less chance to rest, producing crops of a hundred pounds or more per colony, it is better to requeen at least every two years throughout and often requeening every year will pay big dividends.

It is hard to kill a queen that looks good at the time but when her record has been one of long interrupted laying, the probability of future failure is great and so the work of requeening should be done in spite of appearances. The only difficulty is in judging whether the queen introduced will be better than the one removed.

— o —

This has always been a stumbling block with us. How is it possible to tell the value of queens so that only the finest prolific queens are introduced? Some use testing nuclei. If this is followed with determination, I suppose it answers the question but we have never yet found a way satisfactorily to make certain that the queens we introduce are what we want. It is often possible to requeen a whole apiary and not change it materially from what it was before the work began.

— o —

In his extension leaflet 148, "Bees for the Beginner in Massachusetts," Dr. Kellogg calls attention to the value of keeping a calendar or record of the blooming dates of all flowers of any importance, that may serve as sources of nectar or pollen. For the first time this year, we are trying to make a complete calendar of the season; not only to include the blooming dates of nectar and pollen sources but to include the times at which definite work should be done. It is very easy one year with another to get behind schedule. It is much more easy to do that than it is to get ahead of it. I can't remember ever being ahead of schedule, and I can scarcely remember not being behind. Perhaps the calendar will help.

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In the same leaflet, consideration is given to requeening colonies by introducing ripe queen cells. Years ago this was the practice followed with considerable success in apiaries in which I was interested in Maryland.

Here in Illinois it has not yet been tried. It is not easy to do and there is not always a certainty of getting a queen. Yet, as I remember it, the queens obtained were quite good. Probably the best way to requeen is either to raise your own ripe cells or raise your own queens in mating nuclei.

— o —

Either way presents its own difficulties and the work is not easy to learn so that best results are obtained. I don't think that the good queen breeder in the South will have to worry about any of these methods taking his business away from him. The more bees you have, the less likely you are to be independent of the queen breeder. More effort should be made, however, on the part of the queen breeder to furnish queens which answer all our desires.

A Worth While Occasion

At the invitation of one of the trustees of Pleasant Mound Academy in Texas, W. A. Fletcher, of Garland, and myself talked to about four or five hundred students about bees.

In my own talk I used this quotation—"Meat in the smoke house, wheat in the mill, cotton in the gin house, potatoes in the hill, corn in the crib, money in the pocket, baby in the cradle, and a pretty wife to rock it." This seemed to take the audience by storm and led the way to a talk of how I became interested in beekeeping. I talked of my experiences which seemed to go over in good shape.

Then I told them how to increase the number of hives in the spring, how to unite colonies and discussed the bee business from a number of different angles ending with the quotation, "A swarm of bees in April is worth a silk apron; a swarm of bees in May is worth a stack of hay; a swarm of bees in June is worth a silver spoon; a swarm of bees in July ain't worth a fly."

The country schools of Dallas County, due to the influence of the mother of President Franklin D. Roosevelt, have been thoroughly alive to the discussion of bees during the last few months.

John R. Hancock,
Texas.

Utah Crop Cut Third to Half

Drought will cut the honey crop in Utah to from one-third to one-half, especially in the Unitah Basin country—heart of the honey producing section of the state.

The drought also has reduced the crop in Idaho although conditions of southern Idaho are more favorable,
Glen Perrins,
Utah.

FROM THE LITTLE BLUE KITCHEN



"IF BEES COULD KNOW!" (Rhymes for the Fourth)

If bees could know what mortals know
On this great, honored date,
I'm certain on their own account
They'd proudly celebrate!

Today we of the U. S. A.
Recall with flag and flare
The date when freedom, once for all,
Our fathers did declare.

And from that date brave pioneers
Pressed north, south, east and west
To build our homes—those bulwarks strong
On which our land might rest.

And where-so-e'er, through virgin wilds,
Those brave, free white men fared
The questing honeybees went, too,
And their new homelands shared;

And oft indeed were travelers cheered
By some wee gold-brown bee
Because its presence meant that soon
White men and homes they'd see.

Thus did the honeybee become
A bright and certain sign
Of progress 'long the lone frontiers
Toward your home and toward mine.

And so I say if bees but knew
How big a part they've played
I'm sure on patriot-holidays
They'd join the big parade!

—Lida Keck-Wiggins.

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THE fact that the honeybee was a harbinger in pioneer days of the fact that white settlements were near, is very beautifully brought out by Mr. Emerson Hough in his "The Magnificent Adventure." One entire chapter, indeed, is entitled "The Bee," and he tells of an incident where when Lewis and Clark were almost through with their wonderful pioneering expedition to and from the Pacific over the virgin wildernesses of the great Northwest Territory, one of the party brought a bee that had stung him and that he had killed, and showed it to Lewis. Lewis chided him and said that the presence of the bee should have brought a feeling of welcome and not combat, as it undoubtedly meant they would soon see the homes of white men once more. The chapter frankly inspired the author of the above poem to write it as her little "Fourth of July" gesture in the Blue Kitchen.

— o —

Honey Lady greatly appreciates it when her readers take the trouble to send her any good little word about the uses of honey, usual or unusual. Helen Diehl Olds, child story writer, has again sent something quite worth while to the Blue Kitchen desk. This time it was a little clipping from the New York Evening Journal from the pen of a lady signing herself "Donna

Grace." Donna was good enough to say if any one would write to her for it she would send a "nice honey pack." Honey Lady, always with one ear to the ground for anything of that kind, sent, and here 'tis.

"The beauty of a honey facial is in its thorough cleansing, bleaching and drying effect on the skin. It adheres closely to the skin that when it is removed it leaves a feeling of clean pores as well as a dry, smooth and slightly bleached surface.

"Secure the hair very carefully either with a towel or a cap. Then cleanse the face and neck with soap and water, and rinse thoroughly with clear water so that no trace of soap will be left on the skin. Pat the face dry with a smooth towel.

"The ingredients needed are:

- 2 tablespoonfuls of honey
- Cleansing cream
- Tissue Cream
- Astringent
- A bowl containing cubes of ice
- 3 or 4 squares of cotton
- Tissue for removing cream.

"It will be seen that most of these ingredients can be bought in small quantities at any five and ten, so that the treatment will not be costly."

While the directions given by Donna Grace were somewhat too long to use here, Honey Lady will give the first of them which were: "Apply the honey in a thick layer over the face and neck. Do this with the tips of the fingers, and after you have covered the face continue the use of the fingers to massage the honey in." She advises a rotary movement in massaging the honey into the skin. "Honey," she says, "should not be rubbed on as cold cream is, for the reason that it adheres and sticks so to the skin, but should be gently massaged in in circling movements. After from 3 to 5 minutes, remove the honey with warm water and apply cleansing cream. When this is removed pour a tablespoonful of astringent and two tablespoonfuls of water over the ice cubes. Then use little pads of cotton dipped in this cold lotion to the face. Continue to pat it on until you feel a glow and satin smoothness all over the face. When the skin is dried it is ready for the make-up."

— o —

Wonder if the bees realize that they are beauty experts as well as food providers for humanity! There

is a lot men could teach bees about themselves and maybe it's also a case of vice versa. Yes? If bees could talk, I wonder!

— o —

Now that berries are ripe there are many, many ways they may be used in connection with honey. Frozen sweets of almost any kind may be sweetened by this method and thus huge sugar bills are saved for those who have plenty of honey at their command.

This Berry Mousse is a case in point.

Press enough raspberries, blackberries or strawberries through a sieve to produce 1 cupful of juice together with a little of the pulp. To this add $\frac{1}{2}$ cup of extracted honey and the juice of $\frac{1}{2}$ lemon. Blend well. Chill. Then add 2 cups of heavy cream which has been whipped stiff and mix with $\frac{3}{4}$ cup powdered sugar. Freeze.

This mousse or any other should be frozen by being placed in the tray of an electric refrigerator or turned into a mold, covered closely with paper, then with a tightly fitting cover and packed in equal portions of ice and salt and allowed to stand three or four hours.

If frozen in the refrigerator tray, be sure to take it out in about an hour, and agitate the mixture by stirring with a spoon from front to back, and then smoothing down again. This prevents ice crystals from forming through the mousse and spoiling its texture.

— o —

Fruit water ices and ades are delicious during hot July days. Honey Lady was told by a farmer's wife the other day when doing his evening reading her hubby sits with a tall glass of lemonade at his side on the table.

Most anybody knows how to make lemonade and all honey folk know that honey makes it much more delicious than sugar, but here is a recipe for preparing water ices.

First boil together 4 cups of water; 2 cups honey (perhaps a bit more sweetening if the fruit is tart), 2 cups fruit juice of any kind desired; then add 2 or 3 tablespoonfuls lemon juice. This latter will make more acute the fruit flavor—a few grains of salt will help also.

These ices are frozen best with ice and salt in a freezer, though they can be prepared in the electric refrigerator more or less successfully.

— o —

Incidentally if you use, when baking, an oven with a mica window in it, and this window gets very clouded looking, wash it with vinegar and water, and you see inside the oven again while baking.

— o —

Adding a few nice, ripe berries and a spoonful or two of honey to your

cold breakfast foods these warm mornings gives a new relish.

This recipe for "Daffodil Meringue," obtained by Honey Lady from a booklet of Honey Recipes (G. B. Lewis Co.) and tried out in Blue Kitchen lab by her, is so good and toothsome, she passes it along with thanks to the publishers of the attractive booklet.

Daffodil Meringue.

- 2 tablespoonfuls granulated tapioca
- ½ cup honey
- 1 pint boiling water
- 2 tablespoonfuls lemon juice
- 3 eggs
- 1 tablespoonful butter
- Pinch salt

Moisten the granulated tapioca with cold water and stir it into the boiling water. Salt and cook until clear. Beat the yolks of the eggs and beat into the honey with the lemon juice and butter. Add this gradually to the tapioca and cook over hot water until it thickens—about 20 minutes. Pour into a buttered dish, adding a little candied lemon peel if desired. Cover with a meringue made from the whites of eggs beaten with 3 tablespoonfuls of honey and bake to a delicate fawn color.

Now if that "sounds" as good to you as it did to Honey Lady when she read it, you'll do just what **she** did—go right out into your kitchen and make up a "batch" of this delicious meringue. The name's pretty too, don't you think so?

Incidentally did you ever try giving a new and intriguing name to some dish you were obliged to serve more often than you would like, and see what effect there was. There is something in a name, to answer the age-old question of Shakespeare—i.e. "What's in a name?"

Nebraska Bees All Right

A very open December, followed by an even more mild January carried our bees through in Nebraska in wonderfully good condition. Doubtless more honey may have been consumed but practically no colonies have been killed and very few show dead bees thrown out. I have not examined for brood but I believe it is hardly warm enough yet except perhaps where slow robbing is going on.

J. H. Sturdevant,
Nebraska.

Another New Bulletin

"Beekeeping" is the title of a new bulletin by W. J. Baerg recently published by the College of Agriculture, of Arkansas. It is an elementary publication designed for beginners with bees and gives information as to starting with bees, the equipment necessary, sources of nectar, etc. Copies may be had from the Director of Extension, Little Rock, Arkansas.

THE EDITOR'S ANSWERS

When stamp is enclosed, the editor will answer questions by mail. Since we have far more questions than we can print in the space available, several months sometimes elapse before answers appear.

DISEASE IN FOUNDATION—M. D. HIVE

1. I am almost afraid to buy foundation since you advocate rendering diseased combs into wax. Surely that won't kill it when other methods are so much more drastic. The heat of melting wax isn't very hot.

2. If your M. D. hive has enough room for brood rearing and the bees fill it with honey in the fall, why do some men leave a super on it in the winter? Also I saw in the Journal that there was brood in the supers in the spring, though you claim that an excluder is not necessary to keep the queen down.

NEW YORK.

Answer.—1. You need not be afraid to buy foundation on account of foulbrood. When combs are melted, they are always melted in boiling water. They must be so melted or there would be no possibility of securing the wax. Water rarely boils less than a half hour but if it boiled only a few minutes, this would be sufficient to destroy all germs of foulbrood. Many tests have been made which have proven that comb foundation is always immune to any danger of foulbrood. We could not ourselves use foundation in our own apiaries, if there was any doubt of its being safe.

2. There is no need of leaving a super on the Dadant brood chamber for winter. If the hive is properly managed, the brood should be all in the body of the hive and enough honey should be stored in it by the bees to render the super useless in winter. Sometimes, if the supers are left on late in the summer and there is no honey coming in, the queen may go into them and rear brood. This is neglect on the part of the beekeeper. The excluder is not usually needed, but there is no objection to its being used. We prefer to do without it, as it is more or less in the way of the bees as they come from the field. Many beekeepers use it nevertheless.

DESTROYING BEE MOTHS AND EGGS

What should I use to disinfect a hive of comb or honey to destroy the bee moth or eggs? How should I use it and how much?

ILLINOIS.

Answer.—There is nothing we know of that will destroy eggs of wax moths. You can readily destroy the larvae after they are hatched.

You may use carbon dioxide, but this material is risky as it catches fire at the least opportunity and explodes. We prefer to use sulphur or brimstone. One can buy powdered sulphur and spread it over coals in a metal holder and place it under a pile of combs which is covered. Use an empty story next to the burning sulphur to prevent the combs from catching fire.

Or one may buy brimstone, melt it in a kettle and dip strips of cloth into it and, when these cool down, they may be used in any quantity for producing smoke. Put them in a dish under the hives to be treated. The amount needed depends upon how carefully the sulphur fumes are gathered on the combs. A pound of sulphur will do a lot of work.

Since the eggs are not killed, it is best then to treat the combs several times as the eggs hatch. Sulphur fumes are dangerous, but as they are unpleasant to handle, there is no danger of anyone running any risk of being poisoned by them.

ANTS IN THE HIVE

During May I hived a swarm in an old hive bought from a neighbor and containing some comb. The bees are strong and storing honey. On looking into the hive, I discovered ants in a larger proportion than bees, eggs, larvae, etc. I brushed and cleaned as best I could. What can I do to destroy the ants? My hive is sitting on a concrete stand with a base that holds water.

WEST VIRGINIA.

Answer.—It may be a little difficult to destroy those ants. However, if the nest is found and it is in the ground, pour gasoline into it and set it on fire. It must be done quickly so the gasoline will not have time to evaporate, which might put you in danger.

Another way is to make a wall to prevent the ants from going to the hive. Take a little kerosene or coal oil and lay a streak of it all around the hive. The ants when they reach the kerosene will turn away. Usually ants cannot annoy a strong colony of bees as bees fight them successfully.

DRONE LAYING WORKERS

I have a colony that is queenless and has drone laying workers. It also did have American foulbrood. I shook it into an empty hive and in four days will shake it again. I want to unite this colony with another and would like you to advise me how to do it. What part of the day is best?

PENNSYLVANIA.

Answer.—A colony which is queenless and has drone-laying workers is worth very little as there is danger of the new queen being killed by the drone layers or by their sisters. Besides if the colony has had American foulbrood, that is another cause for mistrust. Unless you are anxious to save it and willing to take some risks, I believe the safest way is to destroy the colony. If the combs have been treated, they may do to use, but we prefer to melt them up and heat the honey and the wax to kill the germs.

BANAT BEES

Can you tell me where I can buy Banat bees or Banat queens?

Last year I bought a Caucasian queen. It was as black as tar and her bees are black with a stripe or band looking like Italian bees that have worked in the coal mine. When you take the lid off of the hive, they come out like the old black bees did when we were kids. They are easy bees to work as there are only two or three drones and the queen left in the hive after you get a couple of frames out (if you can stand the punishment). I am just a bee nut and want to get as many kinds of bees as I can to observe them.

NORTH DAKOTA.

Answer.—I am afraid if you buy Banat bees, you will have a similar cause for complaint. There is little difference between Caucasian bees and common black bees. In fact the bees of the Caucasus differ from one place to another as they are not restrained by mountains or the sea all around as the Italians are.

Banat bees are in a frontier district of Hungary and the only thing that limits them to a certain location is the River Danube. So bees in the Banat can not be kept from mixing with other bees of Hungary. We have never cared to try Banat bees and could not give you any information on how to obtain them.

ROBBERS OR QUEENLESS?

I have a colony that acts peculiar. The bees run over the alighting board quivering and fanning their wings. They are dragging out other bees that look black and shiny as if they were glossed. What is wrong and what ought I do with them? KENTUCKY.

Answer.—It looks as though the colony might be robbed. At least the shiny bees indicate it. You would have to look inside to see what is wrong. If they are being robbed, there will soon be an end to the colony. You should learn to examine the hives inside. Buy a smoker and use it. It pays to do so.

QUEEN EXCLUDERS—STRENGTHENING WITH PACKAGE BEES

1. Some beekeepers tell me you do not have to use queen excluders. I always use them at the beginning of a honeyflow. I put the queen and one frame of unsealed brood down in the bottom body and then put the queen excluder over that, leaving the remaining brood to emerge above the excluder. As the bees emerge, the hive above is filled with honey. I then give them supers as they need them unless they show signs of swarming.

If they do show signs of swarming, I Demaree them and usually then they go along right through the season. How can you do this without excluders and keep them from swarming?

2. How do you use your M.D. hive without excluders and not get swarms? I like the looks of these hives and have been thinking of getting one and trying it out.

3. Do you leave bees in the Modified Dadant hive in one hive body for winter and pack them with shavings?

4. I have a hive of bees in which the queen is passe and the colony weak. I am getting a 3-pound package of bees and a queen to put in to strengthen the colony. When I kill the old queen do I put the new queen in the hive and the bees on top with a sheet of newspaper between or is it better to leave the queen with the package and kill the old queen, uniting the bees with the old colony by putting the package and the queen on top of the newspaper.

5. I have had the Journal for seven and eight years and have not seen much about the use of the excluder or not using it for swarming. MASSACHUSETTS.

Answer.—1. Your way of using the queen excluder is good. We do not want to use them where they interfere with the work of the bees because the bees cannot travel about as easily where they have to go through the excluder with a load of honey. An entrance may be kept right to the storing hive from the outside so the bees do not have to pass by the queen to reach them.

2. With the Modified Dadant hive, there is more room for the queen to lay, so there is less need of the queen excluder.

3. The M. D. hives are preferred by many just for this reason and also because they have more honey stored above the brood and cluster for winter. We leave the bees entirely in one story for winter.

4. When you unite the package of bees to the colony, it is best to remove the old queen from the colony and keep the new queen caged for a couple of days before releasing her. There should be no trouble in having her accepted.

5. The Journal does not take sides either for or against the use of an excluder, because the use of an excluder depends on the management which the beekeeper uses.

SWARMS FROM M. D. HIVES

I have a hive of bees in an M. D. hive and they have swarmed twice now. Could the colony be so weak that it would not do good? I was planning on it making honey to take this fall. It is of good size. I am going to save it but wish it had not swarmed a second time. KENTUCKY.

Answer.—The fact that the colony swarmed twice is a good indication that the queen

was old and the bees wanted to replace her. As to whether they will make honey is a question we cannot answer because we do not know the conditions. If the young queen is healthy and prolific and the supply of fall flowers is good, there is no reason why they should not make a good harvest.

Honey Bar a Popular Confection

(Continued from page 317)

70 pounds 75-80 per cent cream
(or the cream from 1300-1400
pounds of 4 per cent milk)
30 pounds strained honey
25 pounds chocolate coating
7 pounds grapenuts or 14 pounds
of fruit

The material cost per bar would average about 2.3 cents at present prices assuming the milk to cost \$1.40 per hundred pounds.

Honey Bar a Concentrated Food

Honey bars being a highly concentrated mixture composed primarily of butterfat and sugars, should be considered a confection rather than an ice cream. The portions should be small so as not to cause the purchaser to tire of the product before it has been entirely consumed. Honey bars are apt to prove most popular among students and office workers who desire a palatable, nourishing, and healthful food that can be quickly and conveniently consumed.

Conclusions

A new product made from a mixture of high test cream (75-80 per cent) and honey flavored with grapenuts or fruit and coated with chocolate has been described. The product is called a "Honey Bar" and can be made at a cost of 2 to 3 cents each. Honey Bars are a rich but palatable confection and have proven particularly popular among students and office workers.

Honey in Its Natural State Slow to Granulate

Honey left in its natural state will not granulate but after it is heated, it will. After heating, the honey depends on the seal of the container. There is always some variation in this. Naturally some jars are tighter than others so the best sealed jars will remain liquid the longest time. The jars that are not sealed tightly will granulate first.

This is very noticeable of all northern and western honey shipped into the Southeast and I have often answered questions about it and the only solution that I know is that the jars be well sealed and there is a great difference in the amount of pressure the caps hold on the honey.

J. J. Wilder,
Georgia.

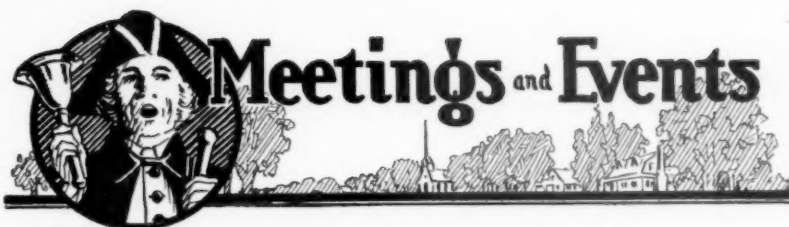
Resourceful Bees

By L. C. Breed,
Massachusetts.

Instances of remarkable resourcefulness on the part of bees are on record. A certain case came under the observation of a naturalist in England. His attention was arrested by the goings-on of a bee busily working the beautiful blue flowers of a long spike of delphinium. The delphinium carries its honey at the bottom of a long spur formed by the prolongation of the upper petal, and presumably only a bee with a considerable length of proboscis could get at it. He was not certain as to the breed of the bee, but thought it might be what was known as bumblebee—a bee with a coat predominantly black, pleasingly varied with old gold. For the time being the point of interest about it was that it did not enter a single flower or attempt an entry, but went straight to the bottom of the spur on the outside. On investigation, every spur was found to be pierced about a quarter of an inch from its extremity, and the bee was extracting honey in this unwarrantable manner. It is called "unwarrantable" because no service in the way of cross-fertilization was rendered by the bee.

Through watching the delphinium, the naturalist found that all the bees that came to it went straight to what might be called the back door. One bee began by going in the right way, but it only did this in a single flower. All of the other flowers on the spike which it visited were explored by going to the entrance referred to. This indicates that when once an unwarrantable entrance to the nectary of a flower has been made, the rest of the bees do not hesitate to avail themselves of it.

When red clover was first introduced in New Zealand, the agriculturists failed to get seed from it. The crop grew splendidly, but the flowers never matured; and for each succeeding season the farmers had to get seed imported from Europe. When the matter was investigated it was found that none of the native insects of New Zealand was capable of fertilizing red clover. The honey in the flower of the red clover is secreted at the base of the stamens, and lies at the bottom of a tube from nine to ten millimeters, and in order to reach this honey in the usual way an insect must have a proboscis of the same or greater length. After bumblebees suitably equipped for the job had been imported and established in the country, red clover did as well in New Zealand as in any other land.



Great Demuth Memorial — Michigan August 1, 2, 3, and 4

Readers have noticed already the announcement of the Demuth Memorial Meeting planned for Michigan, August 1, 2, 3, and 4. Beekeepers of the United States should take this opportunity to take a vacation trip into Michigan. Complete details of the meeting are not yet at hand but it is understood that on August 1st the meeting will be at the apiary of Floyd Markham at Ypsilanti all day. In the morning, visitors may go through the apiary, honey house and so on. In the afternoon a program, continued in the evening with an illustrated lecture by Dr. Webber.

On the 2nd the meeting will be at Battle Creek at the W. K. Kellogg plant. In the evening a drive to the home of Ralph Blackman at Portland for a picnic lunch and a visit to Mr. Blackman's new honey house.

On the 3rd at Grand Rapids, Pantlind Hotel with a visit to J. Cowing at Jenison. In the afternoon a program and on the 4th a trip into the playground of northern Michigan, through the fruit belt and also a meeting at Traverse City.

The following speakers have been named: Mr. E. R. Root, Mrs. M. F. Jensen, Miss Mary I. Barber, Dr. E. Phillips, Prof. H. F. Wilson, Dr. V. G. Milum, Dr. C. W. Burnside, Prof. P. S. Lucas, Charles Reese, Colon C. Lilly, Dr. P. A. Webber of the Rural Educational Association, who has originated a splendid illustrated lecture on the value of honey as a food with colored slides and with motion pictures; and Mr. Clare Blakeslee, sales manager of a chain of stores, who has made a special study of the consumer demand for honey. We expect other speakers for this four day meeting.

R. H. Kelty,
Michigan.

The Valdosta Meeting and Beekeepers' Congress December 17, 1934

The time and place for the meeting of all people interested in beekeeping in North America has been set for the week of December 17, 1934, at Valdosta, Georgia. The Southern States Beekeeping Conference, as the host organization, wishes to extend to you an urgent invitation to come into the Deep South and enjoy the get together. Come and participate in the joint meeting of the Honey Institute, the Honey Producers' League, and the Southern

Conference. For a more convenient term, may we call it really the **American Beekeepers' Congress?**

Southern hospitality will be there to greet you all. The beekeepers of the South are working together to make the clustering at Valdosta a most profitable and enjoyable one. Bring your family along so that they may share with you the interesting sights in the Southland. There are some interesting things around Atlanta that would make a good side trip. Stone Mountain is worth the short distance off the trail. In Atlanta a most interesting picture occupies one building in Grant Park. The picture depicts the Battle of Atlanta. Near Valdosta and Waycross, Georgia, is the famous Okefenokee Swamp where the beekeepers and the bears have a common meeting ground. After the meeting you will want to slip into Florida, which is only a score of miles away.

We are asking you to place a red pencil mark around the week of **December 17** on your calendar. Be sure to place Valdosta in capital letters on the edge of that calendar. We will be planning for a big meeting from now until the close of the Valdosta meeting.

W. E. Harrell, President,
Southern States Beekeeping Conference.

American Honey Producers' League Invited to Join in Demuth Memorial

A cordial invitation has been accepted by the American Honey Producers' League to hold a joint summer meeting with the American Honey Institute and Michigan State Beekeepers' Association August 1-4, successively at Ypsilanti, Battle Creek, Grand Rapids and Traverse City (as already indicated in our notice of the Demuth Memorial). This does not take the place of the regular annual meeting to be held later in the fall.

V. G. Milum,
Secretary.

Michigan Organized from the Ground Up

We have received from R. H. Kelty, Apiculturist, E. Lansing, a list of the state and district officers for the various district organizations recently completed in Michigan. Each district is organized by counties with a county representative so that every county in the state is represented although in some of the northern counties one

man may represent two or more counties. They have gone further than county organization, having township representatives in the more popular counties where beekeeping is important.

This means that in Michigan they have organized the beekeeping industry right down to the township and the response indicates that beekeeping in Michigan is taking on the semblance of an industry.

Kelty says—"We plan to go to our Legislature and get enough appropriation to place apiary inspection on a long term program of complete eradication of foulbrood throughout the state. We are also going to obtain more unity among the beekeepers in marketing honey which will include grades and standards for Michigan honey and a more orderly plan for marketing the exportable surplus. Every member of either county or district association or of the Michigan Beekeepers' Association is contributing fifty cents toward the support of the American Honey Institute."

The state officers are: President Oscar H. Schmidt, Bay City, Route 5; Vice-President Harold A. Albaugh, Gowen; Secretary-Treasurer Russell H. Kelty, E. Lansing. District No. 1 comprises the following counties: Berrien, Van Buren, Cass, Calhoun, Branch, Kalamazoo. District No. 2: Hillsdale, Lenawee, Monroe, Wayne, Washtenaw, Jackson, Ingham, Livingston, Oakland, Macomb. District No. 3: Saginaw, Tuscola, Sanilac, Huron, Bay, St. Clair, Lapeer, Genesee, Shiawassee, Clinton, Gratiot, Midland, Isabella, Clare, Gladwin, Arenac, Iosco, Ogenmaw, Roscommon, Oscoda. District No. 4: Ionia, Montcalm, Kent, Ottawa, Muskegon, Oceana, Mecosta, Barry, Allegan, Eaton, Newaygo. District No. 5: Osceola, Lake, Mason, Manistee, Wexford, Missaukee, Benzie, Grand Traverse, Leelanau, Kalaska, Crawford, Oscoda, Alcona, Alpena, Montmorency, Otsego, Antrim, Charlevoix, Emmet, Cheboygan, Presque Isle, and the Upper Peninsula.

If you are interested in any of these districts, write direct to Prof. R. H. Kelty, East Lansing, Michigan, for an outline of the organization plan and a list of representatives.

League Committees for 1934

The following committees are appointed for American Honey Producers' League for 1934:

Warning Poster — Wm. Mosteller, Casper, Wyo.; F. B. Paddock, Ames, Iowa; O. A. Sippel, Bozeman, Montana.

Legislation — H. F. Wilson, Madison, Wisconsin; James A. Munro, Fargo, North Dakota; Thos. Atchison, Montgomery, Alabama.

Traffic — E. T. Cary, Syracuse, New

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70c	65c	55c	50c	45c	42½c

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L. L. FEREBEE,

::

PINELAND, S. C.

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Personally Reared Queens ITALIANS—CAUCASIANS

1 to 9	10 to 24	25 to 49	50 to 99	100 to 249	250 or more
70c	65c	55c	50c	45c	42½c

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Roy S. Weaver & Bro., Navasota, Texas

AGENT FOR PINARD NAILLESS QUEEN CAGE

York; Don Whelan, Lincoln, Nebraska; Geo. E. Yost, Elyria, Ohio.

V. G. Milum,
Secretary.

Mini-Cassia Producers Meet

At the first meeting of the Mini-Cassia Honey Producers' Association for the 1934 season, the annual election of officers resulted in the following: President, Mr. E. R. Budge; Vice-President, Mr. A. A. Larsen; Secretary, Frank Beach, Jr. The 1933 Board of Directors were retained. The only change on officers was the position of Secretary; Mr. C. C. Barlow, our secretary for the past four years having declined to be nominated.

The meeting was held at the residence of Mr. and Mrs. Frank Beach, and beekeepers in attendance numbered about twenty. The meeting followed a picnic lunch.

Frank Beach, Jr.,
Secretary.

Vigo Host to Indiana State July 14

The Indiana State Association is to be guests of the Vigo County Association on Saturday, July 14. The State Entomologist will make a motion picture of the department which will stage a better beekeeping contest. They hope to have at least 250 present at this meeting. Write to William A. Pogue, President, Terre Haute, Indiana, for details.

Wm. A. Pogue,
Indiana.

New American Honey Institute Receivers

The following list of newly appointed Institute receivers is sent by H. F. Wilson, Chairman of the Institute Finance Committee. The complete list of Institute Receivers which has been published from time to time in various bee magazines will appear again in the August number, to include the names herewith.

Mr. A. D. Calkins, Ladysmith, Wisconsin.

Mrs. M. G. Loveitt, Loveitt Honey Co., 602 N. 9th, Phoenix, Arizona.

Mr. A. D. Hiett, G. B. Lewis Co., 1117 Jefferson St., Lynchburg, Va.

Mr. Irving W. Ohmsted, 119 E. Colton Ave., Redlands, California.

Mr. Geo. W. Bohne, County Agent, Luling, Louisiana.

Mr. Walter M. Copeland, Old Concord Road, South Lincoln, Mass.

Mr. Jonas Collier, The Honey Brook Apiaries, Coxsackie, New York.

Mr. Whitman Coffey, Whitsett, Texas.

Mr. Elmer Carroll, Carroll Apiaries, Central Lake, Michigan.

Mr. E. W. Peirce, Zanesville, Ohio.

Mrs. Benj. Nielson, 1517 O St., Aurora, Nebraska.

Famous Sayings

(Continued from page 301)

bearing in the development and building up of beekeeping to its present status. In the literature pertaining to bees, both past and present, we find writers strongly advocating the fundamental principle of this saying.

"Notably among these was Charles Dadant. His advocacy in using a larger hive so that there would be ample and sufficient room at all times for the queen in her egg laying duties and the amount of stores necessary for rearing a large force of workers for the honeyflow. George S. Demuth came on the scene just at the time when it was necessary to expand the idea of Charles Dadant. His advocacy of using a food chamber where a smaller hive than the Dadant is used placed him among the looming figures of beekeeping in practice and history.

"By the use of the food chamber we attain the goal of raising the force of workers for the crop and not on the crop. Without the food chamber, the big crops of commercial producers would not be realized. In all probability, the meaning of this saying has done more for the expansion and development of beekeeping in late years than anything else."

— o —

Also W. C. Greenleaf, an old veteran at solving "Famous Sayings" comes in with the following:

"The famous saying for June is very appropriate, because of the recent death of the author, George S. Demuth, that great unselfish teacher of beekeeping. And we shall all miss his writings the world over. The saying 'Raise workers for the crop and not on the crop' is certainly a true one and the only criticism of it I could make is, that we do not always know six weeks in advance when we are going to get a crop.

"But it is better to be prepared for the crop that does not materialize than to lose a crop by not being prepared. The present season is an example. The bees are all ready to go, but due to the drought there is very little nectar in the blossoms in my locality. More often the colonies are not strong enough when the flow starts."

— o —

McMicking in Australia Answers April Saying

"Bees Gorged With Honey Never Volunteer an Attack."

"This axiom set down amongst others by Lorenzo Lorraine Langstroth proves his profound knowledge of the honeybee. It is the principle underlying our use of the smoker today. Inscrutable nature has endowed the bees with the instinct, when alarmed to fill itself with honey. We can readily understand this. It is a good example of the law of 'Cause and Effect.'

"Having gorged with honey, each



LADY-LIKE CAUCASIANS

Queen Prices

1-9	10-24	25-49	50-99
70c	65c	55c	50c

CAUCASIAN APIARIES Brooklyn, Ala.

Our Mating Guarantee Is Your Protection

The stock is true. The breeders are well selected. Every queen is guaranteed to be mated to a Caucasian drone. Send for free Caucasian circular.



WRITE FOR SAMPLES AND PRICES

Crystal clear jars of strong simple construction in four sizes—Individual, Half Pound, One Pound and Two Pounds. And the new Bee


Hive jars, attractive for table use, with definite label space. In Half Pound, One Pound and Two Pound sizes. Gold or white screw caps.

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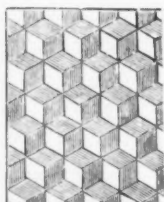


QUEENS PURE ITALIAN STOCK.
HEAVY HONEY GETTERS.
GENTLE TO HANDLE.

ANY NUMBER ANY DAY.

AFTER JUNE 1st					
1-9	10-24	25-49	50-99	100-249	250 up
.70	.65	.55	.50	.45	.42½

LOUISIANA SOUTHERN BEE FARM
Route 2, Baton Rouge, La.



— Foundation —

Send us your wax to be worked into foundation at prices that will save you money. Beekeepers everywhere are using our foundation.

Forty-seven years of prompt service and square dealing is proof that our foundation has given excellent results.

We carry a full line of supplies. Send for our price list.

GUS DITTMER CO., Augusta, Wis.

Queens

JENSEN'S

Queens

"Magnolia State" Three-Banded Italians Right Now Service

Reared under conditions made better than Nature provides; by methods conducive to highest quality. Breeding Queens with background (honey production, first requisite), assure young queens with great prolificness, longevity, and beauty. We are maintaining our capacity of several thousand queens monthly in order to give 24 hour service on all average size orders.

Nothing, with the possible exception of good winter stores, has so much influence on good wintering as young queens. No amount of pampering, by way of helping up with added brood or bees, will give equal results for anything like the small investment in good queens. Queens introduced any time, from now until early fall, will put colonies in prime condition to begin the long winter siege. They will still be young queens next spring, ready for the ordeal that shall decide the crop, provided of course that honey plants do their part.

Our strain of Italians are gentle, beautifully and uniformly marked; not too much tendency to bright yellow. They are hardy winterers in the cold north regions. Try some and be convinced that they have particular merit, especially in comb honey production. Extract from a customer's letter as follows: "Your queens were specified for the reason that your strain has proven superior for comb honey production and is already dominant in our yards. Uniformity of results is what is being aimed at, and your stuff is being given the 'right of way.'" We are in addition at this time using a breeding queen that made a record in comb honey in Illinois season 1933, sent back to us by another customer.

PRICES BALANCE OF SEASON:

Select untested: 1-9, 70c; 10-24, 65c; 25-49, 55c; 50-99, 50c; 100-249, 45c; and 250 or more, 42½c each.

JENSEN'S APIARIES, Crawford, Miss., U.S.A.

Caucasian

Selected Queens

Italian

Reared for service in our own extensive honey producing apiaries. They have to be the best to meet our exacting requirements. We sincerely believe they will fulfill your every requirement, as well.

Summer prices. Discounts on quantity orders.

DAVIS BROS.

COURTLAND, CALIF.

bee is then in a fit state, if forced to migrate, to sustain life and assist in building fresh comb while the swarm is establishing itself in a new home.

"Bees will defend their home; but it is generally the sentry bees that fly out first at the intruder. These sentries have not filled themselves with honey. Drive the sentries in with a puff of smoke and open the hive. Every bee seems absorbed in supping up honey from the combs. Some bees may attack but I find it generally those returning empty from a foraging trip.

"When swarming, the bees are laden with honey. This is why swarms are peaceably inclined and can be handled easily. Imagine trying to hive a swarm if swarming bees were naturally in a fighting mood!

"Throughout the ages honey has been renowned for its soothing qualities.

"From early hives it was used in medicine both internally and externally. Do not the words used of Palestine as 'A land flowing with milk and honey' denote that in addition to being a very desirable place, the inhabitants were very peaceably inclined and does it not suggest that they were more inclined to agricultural labors and unversed in the arts of warfare?

"The father of American beekeeping has left the scene of his labors but his research has started the Golden Age in beekeeping and we are benefiting by his experience. His movable frame hive is still considered the outstanding advance in apiarism to the present day, and his book 'The Honeybee' is read by increasing numbers."

No More "Famous Sayings"

There is so little interest now in "Sayings" that we must end them with this number. A contest of mental stimulation ought to be of interest to more beekeepers. It is quite likely that being busy is the problem. Seasonal demands, care of the bees, and so on put the beekeeper in no mood for puzzles.

We will be glad to substitute something else if there are suggestions but think now we will let it lie for a few months and see what the sentiment is. To us it has been very interesting and constructive and we were surprised in the beginning at the number who were able to solve some really quite difficult things and at the familiarity the subscriber seems to have with the beekeeping literature of the past. It has been fun and we are sorry to end it.



Every bee man should have a pair and be convinced. Quick work, best frame lifter and holder. Axel Horst, Virgin Islands writes: "They give excellent service." B.B. Pliers & Hive Tool Combined can not be beat. Delivered by mail for \$1.00 by—
California Bee & Tool Co.
810 W. Pedregosa, Santa Barbara, Cal.

Moore's Strain

Leather Colored Italian Queens
NORTHERN BRED

1 to 9	70c each
10 to 24	65c each
25 to 49	55c each
50 or more	50c each

World-wide reputation for honey-gathering, hardiness, gentleness, etc., since 1879. Safe arrival and satisfaction guaranteed.

J. P. Moore

MORGAN KENTUCKY

Flower Garden Enthusiasts



Send 10c for sample copy FLOWER GROWER—regular price 20c. A garden magazine devoted entirely to flowers and gardens. Invaluable information in every issue. Splendidly printed and well illustrated. Special introductory subscription—7 months \$1— a 40c saving. **THE FLOWER GROWER**
102 N. Broadway Albany, N. Y.

ELLISON'S QUEENS

Are beautiful three-band Italians of highest quality. Requeen your hives with these queens. They won't disappoint you. I rear every queen personally, no culls, reared by hired help. Hundreds of unsolicited testimonials like the one below.

Have bought queens from several breeders and yours are far the best yet. Enclosed find \$18.75 for 25 more. Signed, E. F. Bennett, Dunedin, Ont., Canada.

Have your orders booked in advance at code prices.

1-9	10-24	25-49	50-99
70c	65c	55c	50c

Orders filled in 24 hours after being received. Guarantee no disease or culls. **C. G. ELLISON :: BELTON, S. C.**

Mountain Gray Caucasian Queens

10 Years' Selective Breeding

Are easy to handle, good honey gatherers, they are pleasing others we believe they will please you. Untested: 1 to 9, ea. 70c; 10 to 24, ea., 65c. Select tested, \$2.25. All guaranteed to please.

BOLLING BEE CO. :: BOLLING, ALA.

Choice Bright Italian Queens

Queens that are a pleasure to work with and be proud to own. Requeen with stock that has been bred and selected in the North the past 31 years for good winterers, hustlers, gentleness and fine color. 85c each; 12 queens, \$9.00. Breeders, \$6.00.

Emil W. Gutekunst, Colden, N. Y.



KELLER COMB FRAME HANDLER—Try this tool 30 days. Return if not satisfied. Your money plus parcel post will be refunded. \$1.50 post paid. Send for circular. **P. C. KELLER :: HOMEWOOD, ILLINOIS**

FOR SALE: PURE ITALIAN QUEENS

Bright Three-Banded Red Clover

1 to 9	70 cents each
10 to 24	65 cents each
25 to 49	55 cents each

GRAYDON BROS.

Route 2 Greenville, Ala.

OUR CUSTOMERS SAY

"The bees you sent me are the best I ever got in package bees."

Allen Joslin, Iowa.

"The others (queens) I bought from you are showing up very nicely—I must say they are the last word in color, so easy to find on the combs, so, I need some more just like them."

A. V. Riehl, Illinois.

"I am writing you regarding the 130 2-lb. packages which I have received from you. Every queen which you have sent me this spring has arrived alive and well. I thank you for shipping the bees on the date promised and must congratulate you on the good cages you use and also the general condition of the whole shipment."

R. R. Victor Tippet, Ontario.

We have doubled the number of our mating nuclei to enable us to serve you better and promptly.

Select Untested "St. Romain's Honey Girl" Italian Queens

(1 to 9) 70c each. (10 to 24) 65c each. (25 to 49) 55c each. (50 to 99) 50c each. Discount from prices of 50—10% for 100 to 249; 15% for 250 or more.

Book your requirements for the summer and order shipments in lots to suit your needs. 10% deposit for advance booking. Circular free.

"St. Romain's Honey Girl" Apiaries, Hamburg, La., U. S. A.



WALTER T. KELLEY

I will accept in advance settlement

WAX - HONEY

or what have you?

in trade for my bright Italian Queen bees.

Approximately 2 lbs. of good quality beeswax or a gallon of clover honey, prepaid to my station will buy a queen.

Do not ship me honey or wax without first sending me a sample, stating the amount, how packed, etc., and getting my exact offer.

Wax or honey received either at PADUCAH, KENTUCKY or HOUMA, LOUISIANA. Write me at either address.

CASH PRICES ON QUEENS ARE:

1-9	70c
10-24	65c
25-49	55c
50 or more	50c

THE WALTER T. KELLEY CO.

PADUCAH KENTUCKY - HOUMA, LOUISIANA

(Formerly operating as The Gulf Coast Bee Co., Houma, Louisiana)

THINGS YOU SHOULD KNOW

We are in the queen and package business to make an honest living. We have no side line to distract our attention.

We are not the best shippers in the South, but we think we are as good as the best. If you are in doubt as to this statement, try our twenty-four hour service on queens and package bees for this month.

If we fail to render this service, your money will be returned same date received. This service does not include Sunday.

If you have not been receiving this service, give us a trial and be convinced.

We feel that we can make this guarantee by anticipating your needs months in advance.

PRICES FOR BALANCE OF SEASON:

QUEENS (Select Untested): 1-9, 70c ea.; 10-24, 65c ea.; 25-49, 55c ea.; 50 or more, 50c ea.

PACKAGES with Queens—Two-Pound: 1-9, \$2.15; 10-49, \$2.05; 50-99, \$1.95; 100-249, \$1.75. Three-Pound: 1-9, \$2.80; 10-49, \$2.70; 50-99, \$2.60; 100-249, \$2.34.

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SHANNON, MISS.

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Mention the American Bee Journal When Writing Advertisers

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(Continued from June issue, page 277)

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Crop and Market Report

Compiled by M. G. Dadant.

For our July Crop and Market Report, we asked reporters to answer the following list of questions:

1. How is the crop so far compared to last year?
2. Prospects for balance of season?
3. What honeyflows yet to come in your section?
4. How is the honey market starting out?

Crop Compared to Last Year

Naturally it is a little bit too early to get any comparisons with last year's crop except in the southern sections and in California. The southern Atlantic coast states seem to have had approximately as good a crop as last year up to the present time. This applies down as far as central Georgia. The extreme southern Georgia and Florida have probably 60 per cent of last year's crop except in the tupelo section which is at least the equal. Alabama and Louisiana report better crops than last year and the same holds true of eastern and southern Texas with perhaps 75 per cent of normal in other parts.

New Mexico is reporting a better crop than in 1933. California, however, is much poorer. The orange crop was not up to last year and the later crops have been almost a total failure on account of the drought. Tennessee and Kentucky and Arkansas seem to have been among the most favored states where the crop has been probably in excess of 1933. However, very little of this honey reaches the outside markets.

Prospects

The New England States have probably average prospects. In many cases the reporters are undecided as to whether the prospects were poor or good, depending upon locations. In New York prospects are very fair since the rains but, of course, they had nearly a 50 per cent loss of bees there so that the crop cannot approximate 1933 in any case. Prospects in the Atlantic coast states are at least the average if not a little better but are short in Georgia and Florida. The southern belt of states seems to have about the average prospects with Louisiana perhaps a little better than a year ago and Texas perhaps less on account of the drought, although there is still some chance for rock brush and white brush and, of course, in the cotton regions for a crop from cotton if there is sufficient moisture.

Pennsylvania has been reporting wonderful prospects there and these extend through West Virginia and into eastern Ohio. Western Ohio like all of the Middle West and plains states has been extremely dry. In almost all instances, beekeepers have reported that although bees have been making a living from the minor plants, the drought has burned up all white clover and the only chance now is later from sweet clover. This extends through all the western belt as far as eastern Colorado, eastern Wyoming and Montana.

In the intermountain states, the question is whether or not there will be sufficient irrigation water as there has been a shortage in many sections. Colorado reporting earlier very excellent prospects on account of rain, now has a mixture of some good reports and some bad ones. Utah and Nevada are largely burned by drought and the same extends clear north into Montana.

Really the only section of the United States which shows highly desirable conditions so far and excellent prospects for the future is Washington, Oregon and the northern sections of California. The same condition exists in British Columbia. In the other provinces of Canada, the prairies provinces have been burned up with drought just like the northern section of the United States and this extends as far as western Ontario. Eastern Ontario reports some chances if rains come and continue.

As a matter of fact, the possibilities for honey from now on depend entirely upon the sweet clover regions. Sweet clover is just now coming into bloom and if rains have fallen generally in the sections where sweet clover usually yields there is still a possibility of a honeyflow in these sections. In many of them, however, in the Dakotas particularly the drought has been so bad that in many cases the bees starved and the clover has withered, particularly the earlier yellow clover.

Whether or not there is going to be anything from sweet clover is still a question although the rains have undoubtedly increased the possibilities from this source. The same thing holds true of the Canadian provinces as with the northern sections of the United States. Rains and plenty of them for the sweet clover bloom will be highly desirable and may yet make a good season out of a partial failure on account of the drought. In all the times that the writer has been conducting this page, he has never seen conditions so dependent upon moisture for the making or breaking of the crop for the United States at this late a date.

In any case regardless of what the rainfall may be from now on, there cannot be a heavy crop of honey in the United States we believe. The white clover sections are out of the running entirely. California is practically through and so many other sections are so badly impaired that it does look like there would be a short crop this year. Of course this may make it all the more attractive to those sections which do get a crop because it should mean that the short amount of honey will sell well.

Rains, we believe, have generally fallen throughout all of the drought stricken areas although there are still some localized areas which have not had the benefit of the rain during the past two or three weeks. This does not mean that the drought is entirely broken because it will take continued rains to keep the soil in a satisfactory condition inasmuch as we do not have any subsoil moisture to fall back upon.

Therefore, to insure a crop, rains must continue and to give anything like prospects for next year throughout the general clover belt and prospects for fall, rains must come to the saturation point almost.

Honeyflows

As mentioned previously, the chief honeyflow to be depended upon from now on is sweet clover and alfalfa with white clover perhaps in the New England states and New York and sumac along the northern Atlantic coast.

Sourwood and sumac will extend well down into the Carolinas. There are some chances of partridge pea and sweet clover throughout the South with vervane and other similar plants in Louisiana and white brush and cotton in Texas.

Generally, throughout the whole United States sweet clover is the crop which must be generally depended upon to make or break. Of course, New York, Pennsylvania and other sections will have buckwheat and the Central West may have fall flowers to fall back upon. In the intermountain territory, there will be the later cuttings of alfalfa, and yellow sweet clover. Outside of northern California and a few irrigated sections of the South, the general reports from California are that if the bees make enough to winter on, they will be content.

Reiterating these statements, it does just look like the sweet clover is going to either "make or break" the honey crop this year. We hope that at least the sweet clover folks will get in some good licks with their bees and produce results which may help bring the average up for the United States.

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The POSTSCRIPT

GOSSIP ABOUT THE OFFICE IN THE MAKING OF THE MAGAZINE

The criminal law as now enforced is a sad commentary on the attitude of the average lawyer. The defense of criminals instead of being a matter of insuring a fair trial for the accused has degenerated into the resort to any kind of trick to cheat the law. No matter what the record of the criminal caught in the net, his attorney, for a fee, will do everything possible to assist him to escape his just penalty. Lawyers thus have become a part of the organization of crime which now threatens our very civilization.

Among the famous persons who were interested in bees may be mentioned Harriet Beecher Stowe, author of "Uncle Tom's Cabin," who wrote an article regarding the opportunities for women in the keeping of bees for "American Woman's Home" in 1869. The name of Catherine Beecher appeared as joint author.

Letters are coming to this office from bee men who report that the dry weather has destroyed all chance of a crop from white clover. Many want to know whether soy beans produce any honey as thousands of acres are being planted. I have never found the bees working on soy beans to any extent in this part of Illinois. There are reports of honey from this source in North Carolina and Tennessee. From some places come reports that the bees work soy beans eagerly but store no surplus. Further reports will be appreciated.

Nearly forty years ago 928 patents had been issued on beehives in this country. Many more have been issued since that date. That looks like a large number of attempts to find the two hives which have met the test of time and remained in common use. The beekeeper may gamble on the weather but his risk is small compared to the man who gambled on a new kind of hive.

In some of the old bee magazines, propolis is advised as a corn plaster. It was said that warm propolis spread on cloth placed over the offending corn would in time cause it to drop out. In the old days honey was recommended as a remedy for all kinds of ailments.

Reports from the dry areas indicate that many colonies are short of stores in June. It is unusual to do much feeding at this season but unless it is done many bees will be lost. I have seen strong colonies of bees die of starvation in June, only to be followed by a fair crop to be gathered by those which remained. Conditions may change very quickly when rain comes.

Interest in Caucasian bees does not appear to be quite so high as it was a few months ago. Some who were enthusiastic about them after a short trial have expressed a dislike of the tendency to spread propolis in inconvenient places. They are, however, gentler and less inclined to rob than some others.

Charles Robertson, of Carlinville, Illinois, has found 296 different species of wild bees on the flowers within ten miles of Carlinville. Of these eight species were bumblebees. The casual observer has little idea of the number of kinds of wild bees which may be common in his neighborhood.

Mr. Robertson has spent many years in the study of plants and their insect visitors and probably knows more about the insects which visit particular kinds of plants, in the Middle West, and the effect of their visits, than any other living man. John H. Lovell, who is well known to our readers through his frequent contributions to this magazine has made similar observations in Maine. It would be a delightful experience to spend a day in the field with either of them.

Miss Ash who opens the incoming mail at this office has called my attention to the fact that a count discloses

that shipments of wax represented by correspondence on her desk at one time came from twenty-four different states. Not many days would pass until she would receive something from nearly every state in our great country.

With scientists estimating that the bees must travel a distance equal to a trip around the world to store a pound of honey, I would like for someone to estimate how many miles of flight were represented by the bees in the twenty-four states to get the thousands of pounds of wax which Miss Ash was recording. Since it is thought that bees consume from ten to twenty pounds of honey to produce a pound of wax it would take a considerable number of figures to record the mileage.

All of which gives rise to the thought that the efforts of any one individual, great or small, in any field, counts for but little. It is the cooperative effort of many working together which gets things done—a lesson which mankind is slow to learn.

Sweet clover is widely distributed over the reservation of the Omaha tribe of Indians. Its first appearance was on the grounds of the Presbyterian Mission built in 1856. The Indians called it "sweet grass" and were pleased with the pleasant odor, which they associated with the white man's religion owing to its presence at the Mission. They gathered bunches of it to carry to their homes and thus it was scattered over the reservation.

The Red Man called the bee the white man's fly. One old Indian is said to have remarked the first time he saw a hive of bees: "White man work, make ox work, now make fly work, this Injun go away."

Official government figures for Canada give the average net price received by the beekeepers of that country for last year's crop as nine cents per pound. Considering the yields which they get it is no wonder that Canadian bee men are enthusiastic.

Inquiries continue to come in regarding the black locust tree and whether it has undesirable characteristics. Scattering of the seed does cause some bother through the sprouting of young trees in locations where they are not wanted. This, however, is not serious and the same applies to most other trees. Squirrels plant the black walnuts all over our farm yard and young trees come up in the most unexpected places.

Black locust will do well on very poor land and is one of the best for sandy spots where few other trees will succeed. The flowers are very attractive and provide a good honeyflow for a brief time. The locust borer kills many of the trees before they reach maturity and is the hardest thing to combat in growing these trees.

The honey locust makes a finer tree than the black locust but does not yield as much honey. The worst objection to it is the very long thorns. At some nurseries trees without thorns may be secured and these should be selected when planting for shade or ornament. This species is not seriously injured by any insects as far as my observation extends.

In May Gleanings, C. L. Farrar calls attention to the need of a liberal reserve of pollen in the brood nest for winter. To me one of the worst objections to the Langstroth hive is the difficulty of securing this condition when running for extracted honey. So much of the pollen is stored in the supers and removed when extracting that the bees are too often short. This accounts for some of the winter losses with shallow frames.

FRANK C. PELLETT.